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Twins and the Nature-Nurture Controversy

By T. KOERTVELYESSY*

SUMMARY

The nature/nurture controversy represents the inevitable outcome of the clash of two "opposing" ideas, namely environmental determinism and biological heredity. It was suggested as early as 1875 that twins may be investigated for the possible resolution of this issue. The statistical aspect of the twin study method is discussed along with the methods presently available for the determination of twin zygosity. Although the twins-approach is not without scientific merit, serious reservations derive from the following problems and/or shortcomings: (1) the assumption of the method regarding the equivalency of environmental influences upon the two groups of twins being investigated; (2) sampling biases; (3) possible errors and/or shortcomings in zygosity determinations; and (4) the lack of sufficient specificity in the results obtainable with this approach.

The objectives of this paper are threefold: (1) to review briefly the historical development of the nature/nurture controversy; (2) to discuss the twin study method and in particular a technical aspect of this approach, namely the diagnosis of twin zygosity; and (3) to acquaint readers with some limitations inherent in the twins-approach. Because of the recent insistance of some individuals[1] on a relationship between "race" and "intelligence," the level of genetic control, or heritability, exerted over quantifiable traits once again appears to merit the attention of the research oriented scientist and the curiosity of the educated layman. The following factors warrant my writing this article: (1) nature/nurture investigations rely heavily upon the utilization of data from twins; (2) few individuals are aware of the methods presently available for the diagnosis of twin zygosity; and (3) even fewer individuals are acquainted with the reliability of these diagnostic methods, and especially with the limitations of the twins-approach as a research tool concerning the nature/nurture controversy.

* The author gratefully acknowledges financial support from the National Institute of Health and the National Science Foundation.

[1] A. R. Jensen, "How Much Can We Boost I.Q. and Scholastic Achievement?" *Harvard Educational Revue*, Vol. 39, 1969, pp. 1-123; W. Shockley, "Negro I.Q. Deficit: Failure of a 'Malicious Coincidence' Model Warrants New Research Proposals," *Rev. Educ. Research*, Vol. 41, 1971, pp. 227-248.

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THE PROBLEM: NATURE OR NURTURE

At our present state of knowledge, we recognize two components bearing upon biological diversity: (1) heredity, or our inborn and genetically inherited endowment, and (2) environment, or the conditions of life affecting the expression of our genetic endowment.[2] Although Sir Francis Galton already a century ago referred to these components as nature and nurture respectively, he is not responsible for the formulation of the controversy. A careful examination of Galton's treatise[3] on the nature/nurture issue shows that he was suggesting a solution for the possible resolution of this controversy rather than stating the problem. The problem or controversy itself involves the relative importance of these two components. In other words, the question is whether nature (i.e., genetics) or nurture (i.e., environment) is the more important force in the expression of a given quantifiable trait. Since Galton suggested a possible solution to this problem, the origins of the controversy are to be sought previous to the impact of Galton on the scientific world. Although the nature/nurture controversy is interesting, it must be emphasized that normal ontogeny requires both of these components and thus, in a sense, the question as it is stated above is moot.

HISTORICAL BACKGROUND FOR THE NATURE/NURTURE CONTROVERSY

I contend that the nature/nurture controversy was the inevitable outcome of the clash of two opposing ideas. On the one hand, the vogish and near dogmatic belief in theories of environmental determinism adversely influenced scientific thinking for centuries; on the other, there has been a gradual realization of the importance of biological inheritance. Since in the eyes of their adherents these two ideas were mutually exclusive, the clash was almost natural.

Folk[4] claims an interest in environmental influences as early as roughly B.C. 300 when the Greek physician Hippocrates investigated the effects of climate on human physique and psyche. It was Hippocrates who laid down the first set of principles concerning the man-environment concept. Soon thereafter, atmospheric conditions alone were assumed to be responsible for human plasticity and some writers, notably Polybius,

[2] J. F. Crow, *Genetics Notes,* Burgess, Minneapolis, 1966, p. 56.

[3] F. Galton, "The History of Twins, as a Criterion of the Relative Powers of Nature and Nurture," *Popular Science Monthly,* Vol. 8, 1875, pp. 345-357.

[4] G. E. Folk, *Introduction to Environmental Physiology,* Lea and Febiger, Philadelphia, 1966, p. 14.

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Aristotle, Cicero, Vitruvius, Pliny, and Galen, went so far as to attempt to establish and to explain the pre-eminence of their own " race " on an environmental basis.[5] According to Thomas,[6] medieval authors such as Paul the Deacon, Ibn Idrisi, and Ibn Khaldun also considered the effects of climate. Despite this, environmental determinism could not be said to have flourished in the medieval era in comparison to the earlier classic period and the times following the mid-1500s. The French political philosopher Jean Bodin[7] may be credited with the first systematic discussion of the influence of geographic environment upon human society, and the English physician Richard Mead[8] with a similar discussion concerning vital body processes. Later Arbuthnot,[9] Spencer,[10] and Buckle[11] in England; Ritter,[12] and Ratzel[13] in Germany; Draper,[14] Dexter,[15] Semple,[16] and Huntington[17] in America; and Montesquieu,[18] and Turgot[19] in France continued with this deterministic viewpoint. This, however, is neither to deny the existence of critics of environmental determinism,[20] nor to claim that the above individuals exclusively were responsible for such theories.

Although biological diversity has been recognized early in the history of mankind,[21] the beginnings for the scientific explanation of this phenomenon are historically associated with

[5] F. H. Garrison, *An Introduction to the History of Medicine,* Saunders, Philadelphia, 1917, pp. 75ff.

[6] F. Thomas, *The Environmental Basis of Society,* Century, New York, 1925, pp. 30ff.

[7] J. Bodin, *Six Bookes of Commonweale,* Harvard, Cambridge, 1962. Facsimile reprint of the English translation of 1606.

[8] R. Mead, *A Treatise on the Influence of the Sun and Moon Upon Human Bodies,* London, 1748, pp. 151-206.

[9] J. Arbuthnot, *An Essay Concerning the Effects of the Air on Human Bodies,* J. and R. Tonson and S. Drap, London, 1851.

[10] H. Spencer, *Principles of Sociology,* Appleton, New York, 1893.

[11] H. T. Buckle, *The History of Civilisation in England,* J. W. Parker, London, 1857.

[12] K. Ritter, *Geographical Studies,* Gould and Lincoln, Boston, 1863.

[13] F. Ratzel, *The History of Mankind,* Macmillan, London, 1896.

[14] J. W. Draper, *History of the Intellectual Development of Europe,* Harper, New York, 1904.

[15] E. G. Dexter, *Weather Influences,* Macmillan, New York, 1904.

[16] E. C. Semple, *Influences of Geographic Environment,* Holt, New York, 1911.

[17] E. Huntington, *Civilisation and Climate,* Yale, New Haven, 1915; *World Power and Evolution,* Yale, New Haven, 1919.

[18] Baron de Montesquieu, *The Spirit of Laws,* Hafner, New York, 1748.

[19] A. R. J. Turgot, *Plan de Deux Discours sur l'Histoire Universelle,* Guillaumin, Paris, 1844. p. 645.

[20] See for example F. Thomas, *op. cit.,* pp. 255-306.

[21] See for example H. F. Roberts, *Plant Hybridization Before Mendel,* Hafner, New York, 1965, pp. 1ff.

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1866 and 1900. In 1866 Gregor Mendel published his now famous laws on biological inheritance and pointed out that this phenomenon is based on the particulate (i.e., discrete) nature of the genetic material and the principles of independent assortment and dominance or recessiveness. Unfortunately, the significance of these laws went unnoticed until 1900 when Correns, DeVries, and Tschermack independently re-discovered and fully appreciated these general principles. This, however, does not imply that Mendel's predecessors can be completely ignored. On the contrary, the gradual build-up of ideas cumulating in the modern discipline of genetics is also traceable to Hippocrates and Aristotle if genetics is defined broadly as the consideration of such topics as heredity and variation.[22] Later such eminent naturalists as Herodotus, Pliny, and Theophrastus also considered these topics.[23] In a brief article such as the present, it would be impossible to discuss in sufficient detail the contributions to genetics of the long list of plant hybridizers before the time of Mendel. At any rate, such a discussion may be found in the work of Roberts.[24] Here, let it suffice that from this rather select list of scientific personalities the works of Sageret,[25] Vilmorin,[26] Knight,[27] Goss,[28] Laxton,[29] Wiegman,[30] and Wichura[31] deserve special mention for their anticipation of some Mendelian principles as well as some other concepts commonly associated with modern genetics. Somewhat less important to this topic is the work of certain animal breeders and zoologists. Although animal

[22] A. Barthelmess, *Vererbungwissenschaft,* Karl Alber, Freiburg/Munchen, 1952, Chapter 1.

[23] H. F. Roberts, *op. cit.*, p. 12.

[24] *Ibid.*

[25] A. Sageret, "Considérations sur la production des hybrids des variantes et des variétés en général, et sur celles des cucurbitacees en particulier," *Ann. Sci. Nat. Prem.*, Vol. 8, 1826, pp. 294-314.

[26] H. Vilmorin, "L'hérédité chez les végétaux," Conférences de l'exposition universelle de 1889, Paris, 1890.

[27] T. A. Knight, "Some Remarks on the Supposed Influence of the Pollen in Cross Breeding, Upon the Colour of the Seed-coats of Plants, and the Qualities of Their Fruits," *Transactions of the Horticultural Society of London,* Vol. 5, 1823, pp. 377-380.

[28] J. Goss, "On the Variation in the Colour of Peas, Occasioned by Cross-impregnation," *Transactions of the Horticultural Society of London,* Vol. 5, 1824, p. 234.

[29] T. Laxton, "Notes on Some Changes and Variations in the Offspring of Cross-fertilized Peas," *Journal of the Royal Horticultural Society,* Vol. 3, 1872, pp. 10-14.

[30] A. F. Wiegmann, *Uber die Bastarderzeugung im Planzenreiche,* Vieweg, Braunschweig, 1828.

[31] M. Wichura, *Die Bastardbefruchtung im Plenzenreich, erlautert an den Bastarden der Weiden,* Morgenstern, Breslau, 1865.

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breeding is an old practice, the "experimenters" of the ancient times and the classic era may be completely ignored for the purposes of this work because their emphasis was more on art than on scientific principles. In contrast to this, we cannot ignore the work of animal breeders later, particularly following 1760. The population explosion concommitant with the Industrial Revolution increased manyfold demands on food supplies. This simple economic event is probably the most crucial factor to the emergence of a score of outstanding animal breeders after 1760; among them such well known names as Bakewell, the Tompkins and Galliers families, and the Colling brothers.[32] Despite this, the problems of heredity remained almost exclusively the province of plant hybridizers. In addition to purely practical objectives, these breeders attempted to elucidate the degrees and causes of hybrid sterility. Their work is significant to the extent that even the foremost biologist of the nineteenth century, Charles Darwin,[33] expressed his indebtedness to hybridizers for their many contributions to the controversy regarding the origin of species and to his own theory of natural selection. Despite this, and although the zoologist Maupertius already in 1744 emphasized the significance of biparental heredity as well as the particulate nature of the hereditary material,[34] Darwin[35] remarked that in 1859 the laws governing biological inheritance were still quite unknown. In this respect even Mendel's monumental research did not bring about an immediate change. Following Mendel's lecture before the Brünn Society for the Study of Natural Science not a single question was asked and the minutes of the meeting indicate that nothing significant occurred.[36] Unfortunate as it may sound, Mendel's laws were destined to lie either unread or unappreciated on library shelves in the *Proceedings of the Brünn Society for the Study of Natural Science* for the next 34 years. For the period between 1866 and 1900, Francis Galton's name deserves special mention in the history of genetics because his application of mathematical principles to the statistical data of inheritance constitutes the most thorough "pre-Mendelian" method.[37] Following the re-discovery of Mendel's

[32] L. M. Winters, *Animal Breeding,* Wiley, New York, 1948, pp. 31ff.

[33] Charles Darwin, *On the Origin of Species,* Harvard, Cambridge, 1966, Chapters 1 and 2.

[34] B. Glass, "The Establishment of Modern Genetical Theory as an Example of the Interaction of Different Models, Techniques, and Inferences," *Scientific Change* (edited by A. C. Crombie), Basic Books, New York, 1961.

[35] Charles Darwin, *op. cit.,* Chapter 1.

[36] L. Eiseley, *Darwin's Century,* Doubleday, Garden City, 1961, p. 206.

[37] H. F. Roberts, *op. cit.,* p. 240.

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laws in 1900, the pace quickened somewhat in the early twentieth century for the development of genetics as an exact and a formidable scientific discipline but this is not the concern of the present article.

HERITABILITY AND THE TWIN STUDY METHOD

Heritability is the level of genetic control over a given trait. The problem solution rests upon the assessment of the relative weights to be assigned to genetic and to environmental influences upon the particular traits in question. Hiernaux[38] points out that such an assessment may be achieved by the utilization of the following broad categories of methods: (1) the comparison of phenotypes resulting from the actions of different environments upon the same genotype, and (2) the comparison of intrapair differences in monozygotic (MZ or identical) and in dizygotic (DZ or fraternal) twins where environmental influences have been held constant. The first of these methods may be applied at the individual or at the population level. At the individual level several individuals may be subjected to an environmental change and studied in a before versus after situation, or else MZ twins reared apart under dissimilar environmental conditions may be compared with MZ twins reared together under similar environmental conditions. At the population level genetically similar populations living under contrasting environmental conditions may be compared with one another.

In genetic studies of man, the best experimental approach is probably provided through the investigation of twins. The twin study method goes back to Galton's insistence[39] on the usefulness of twins in attempting to resolve the nature/nurture issue despite obvious difficulties concerning the diagnosis of twin zygosity at that time.[40] The rationale for the twin study method is clearly summarized by Dahlberg.[41] MZ twins are the result of zygotic division after the union of a single spermatozoon with a single ovum. Hence, MZ twins share the same genetic endowment and the same[42] uterine environment. DZ twins, on the other hand, result from the separate fertilization of two different eggs.

[38] J. Hiernaux, "Heredity and Environment: Their Influence on Human Morphology. A Comparison of Two Independent Lines of Study," *American Journal of Physical Anthropology,* Vol. 21, 1963, pp. 575-589.

[39] F. Galton, 1875, *op. cit.*

[40] B. Price, "A Review of Prenatal and Natal Difference-Producing Factors in Monozygotic Pairs," *American Journal of Human Genetics,* Vol. 2, 1950, pp. 293-352.

[41] G. Dahlberg, *Twin Births and Twins from the Hereditary Point of View,* Tidens Trykeri, Stockholm, 1926.

[42] The degree of similarity is unclear to the extent that there is a major problem in the interpretation of the results.

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Hence, DZ twins are simply siblings who shared their mother's uterus and uterine environment at the same time by chance. Consequently, the differences observed in measurements carried out on the two types of twin-pairs should reflect the difference in the genetic make-up of the two kinds of twins. Intrapair differences in MZ twins result from measurement error and from the influence of environmental differences. Intrapair differences in same sexed DZ twins reflect measurement error, differences in environment, and differences in heredity. Intrapair differences in opposite sexed DZ twins represent measurement error and environmental, hereditary and sexual differences.

The twin study method usually consists of simple variance analysis. First, variance in a phenotypic trait is determined separately for the MZ and DZ twin groups, and then these variances are compared to one another. This approach was first formulated by Dahlberg,[43] and is known as the heritability estimate or F-ratio method. The actual formula to be employed is given by Vandenberg[44] as follows:

$$F = \frac{s^2 \text{ within DZ}}{s^2 \text{ within MZ}} = \frac{Nmz \ \Sigma \ d^2DZ}{Ndz \ \Sigma \ d^2MZ}$$

where N is the number of twin-pairs, d is the difference between twin A and twin B of a given pair, and the degrees of freedom are given by Ndz and Nmz. The statistical significance of the obtained values may be determined from the table of F distributions.

Thus, the heritability estimate will express genetic control as the ratio of mean intrapair variance in DZ twin measurements to mean intrapair variance in MZ twin measurements. Since the differences between DZ twins are due to environmental as well as to hereditary factors while MZ twin differences are environmental only, the F-ratio is expected to estimate heritability by way of the excess variance which may be ascribed to dissimilar genetic endowment. Although a high F-ratio value indicates high heritability or low ecosensitivity, it is important to emphasize that the F-ratio is not a direct measure of the degree of genetic control and the fact that no such direct measure is possible on twin data.[45] At the same time, it should be pointed out that the mathematical formula given above is only one out of a number of possible expressions.[46]

[43] G. Dahlberg, *op. cit.*

[44] S. G. Vandenberg, "How 'Stable' are Heritability Estimates? A Comparison of Heritability Estimates from Six Anthropometric Studies," *American Journal of Physical Anthropology*, Vol. 20, 1962, pp. 331-338.

[45] *Ibid.*

[46] See S. G. Vandenberg, *op. cit.* for others.

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THE DIAGNOSIS OF TWIN ZYGOSITY

A central and a crucial aspect of any research involving twins is the diagnosis of twin zygosity. Despite numerous attempts to standardize diagnostic procedures, diagnosis remains a debated problem in twin studies. From a methodological viewpoint, the diagnosis of twin zygosity should always be as objective as possible and, in order to avoid circular reasoning, those characters must be selected for the diagnosis which neither directly correlate with nor reflect the intrapair differences under investigation. The characteristics chosen must exhibit cleaf-cut differences and the diagnosis must be based upon a definitely established point of realiability.[47] The diagnostic methods previously utilized are discussed below.

(1) *Examination of fetal membrane(s).* Walker[48] points out that DZ twins have either two separate placentas or else a single dichorionic placenta. MZ twins, on the other hand, may be characterized by any one of the following conditions: two separate placentas, a single dichorionic placenta, a monochorionic placenta with a common circulation, a monochorionic and a monoamniotic placenta with separate umbilical cords, a monochorionic and a monoamniotic placenta with a single bifid umbilical cord, and a monochorionic and a monoamniotic placenta with a single umbilical cord. From this follows the assumption that all monochorionic placentas belong to MZ (or identical) twins because no case of certain DZ (or fraternal) twin-pairs of proven monochorionic origin has been reported so far. Consequently, the monochorionic condition must be regarded as the only existing proof of monozygosity.[49] However, this diagnostic method has some obvious drawbacks. First, theoretically only a portion of the MZ twins are monoamniotic; indeed, Corner[50] estimates that as much as 38 per cent of all MZ twins may have separate chorions. Second, only on exceptional occasions is reliable information available concerning the afterbirth. Therefore, it must be concluded that fetal membranes cannot be considered to be conclusive indicators of twin zygosity.

(2) *Evaluation of phenotypic similarity.* This method con-

[47] R. H. Osborne and F. DeGeorge, *Genetic Basis of Morphological Variation,* Harvard, Cambridge, 1959, p. 178.

[48] N. Walker, "Determination of the Zygosity of Twins," *Acta Genetica,* Vol. 7, 1957, pp. 33-38.

[49] N. Juel-Nielsen, A. Nielsen and M. Mauge, "On the Diagnosis of Zygosity in Twins and the Value of Blood Groups," *Acta Genetica,* Vol. 8, 1958, pp. 256-273.

[50] G. W. Corner, "The Observed Embryology of Human Single-ovum Twins and Other Multiple Births," *Am. Journal Obst. Gynec.,* Vol. 70, 1955, pp. 933-995

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sists of the comparison of observed resemblances in MZ twin-pairs with those in DZ twin-pairs on a large number of traits. This method was first advocated by Siemens[51] who included the following traits in his analysis: hair color, hair form, eye color, skin color, downy hair, freckles, acne, furrowing of the tongue, face form, ear form, hand form, nail form, body build, mental make-up, illness and abnormalities, fingerprints, and blood groups. Due to the subjective nature of the evaluation, however, this diagnostic procedure did not prove to be sufficiently reliable. Although later Essen-Muller[52] refined Siemen's method by numerically estimating the value of several physical traits for diagnosing twin zygosity, this method still failed to attract sufficient attention because of theoretical and methodological shortcomings. Denckler *et al.*[53] claim even this refined method to be unsatisfactory because it lacks sufficient reliability and because it is extremely time consuming.

(3) *Serological comparison.* As a result of the progress made during the past 25 years in serology and serological genetics, blood groups have become an invaluable tool in the determination of twin zygosity.[54] Osborne and DeGeorge point out that from a genetic viewpoint those phenotypic characters are of greatest potential value in the diagnosis of twin zygosity which have a high, ideally 100 per cent penetrance and expressivity. Blood groups satisfy this requirement. Furthermore, there is general agreement that the examination of serological characters is the single most valuable and reliable means of diagnosing twin zygosity.[55] However, this is not meant to say that serological comparisons allow fool-proof diagnosis of zygosity. On rare occasions DZ twins could have a mixture of each other's blood

[51] H. W. Siemens, "The Diagnosis of Identity in Twins," *Journal of Heredity,* Vol. 18, 1927, pp. 201-209.

[52] E. Essen-Moller, "Empirische Aehnlichkeitsdiagnose bei Zwillingen," *Hereditas,* Vol. 27, 1941, pp. 1-50.

[53] S. J. Denckler, M. Hauge, L. Kais and A. Nielsen, "The Use of Anthropological Traits and Blood Groups in Determination of the Zygosity of Twins," *Acta Genetica,* Vol. 11, 1961, pp. 265-285.

[54] S. M. Smith and L. S. Penrose, "Monozygotic and Dizygotic Twin Diagnosis," *Ann. Hum. Genet.,* Vol. 19, 1955, pp. 273-289; N. Walker, *op. cit.*; R. B. Race and R. Sanger, *Blood Groups in Man,* Blackwell Scientific Publications, Oxford, England, 1968; R. H. Osborne and F. DeGeorge, *op. cit.*

[55] S. J. Denckler, *et al., op. cit.*; N. Juel-Nielsen, *et al., op. cit.*; R. C. Nichols and W. C. Bilbro, "The Diagnosis of Twin Zygosity," *Acta Genetica,* Vol. 16, 1966, pp. 265-275; A. Lundstrom, "Tooth Morphology as a Basis for Distinguishing Monozygotic and Dizygotic Twins," *American Journal of Human Genetics,* Vol. 15, 1963, pp. 34-43.

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cells, MZ twins could be of different sex,[56] and two enterprising sperms could fertilize the same ovum.[57]

Operationally this method is quite simple. Discordance in any one of the blood factors tested satisfies the minimum condition of dizygosity. At the same time, concordance in all of the examined blood factors does not prove monozygosity; it only allows the calculation of probabilities in favor of a DZ condition.[58] The calculations themselves involve the ascertainment of the following probabilities: the relative chance of the occurance of the two kinds of twins, the relative chance of the occurance of either sex, and the relative chance of the occurance of each particular blood factor. Multiplying these probabilities together we obtain the following expression:

$$pD = (p_0D) \times (p_1D) \times (p_2D) \times \ldots\ldots\ldots (p_nD).$$

where pD is the relative chance that a given twin-pair is dizygous, p_0D is the initial and estimated relative probability in favor of dizygosity in a given population, p_1D is the relative probability in favor of both members of a DZ twin-set being the same sex, p_2D is the relative probability in favour of both members of a given DZ twin-set being in agreement on the first blood factor under consideration, and p_nD is the relative probability in favor of both members of a given DZ twin-set being in agreement on the n-th blood factor under consideration. The formula $pD/(1 + pD)$ expresses the *total probability* that the twins are dizygous, and $1/(1 + pD)$ expresses the probability that they are monozygous.[59] The calculation of total probability in favor of a particular zygosity type is relatively simple if the blood groups of the parents of the twins are also known. Otherwise, the calculations become extremely laborious but they may be circumvented by the use of tables developed by Smith and Penrose,[60] and updated by Race and Sanger.[61] Thus, although monozygosity cannot be established with absolute certainty, with the use of these procedures the diagnosis of the monozygotic condition has been brought to sufficient accuracy for the purpose of most, if not all, scientific investigations.[62]

[56] An XY male and an XO Turner's syndrome female.

[57] R. B. Race and R. Sanger, *op. cit.*, p. 467.

[58] S. M. Smith and L. S. Penrose, *op. cit.*; R. B. Race and R. Sanger, *op. cit.*, p. 473.

[59] S. M. Smith and L. S. Penrose, *op. cit.*

[60] *Ibid.*

[61] R. B. Race and R. Sanger, *op. cit.*, p. 470.

[62] B. S. Kraus, W. J. Wise and R. H. Frei, "Heredity and the Craniofacial Complex," *American Journal of Orthodontics,* Vol. 45, 1959, pp. 172-217.

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(4) *Dermatoglyphic comparison.* For quite some time, fingerprints have attracted considerable attention because they are unique in each individual and at the same time they are free from age change.[63] Since Galton's original study,[64] numerous other investigators[65] have focused upon the genetics of fingerprints. All of these investigations, however, yielded indecisive results. Consequently, we must admit that our understanding of the methods of inheritance for the pattern or the other qualitative features of ridge design remains uncertain at best.[66] Having failed to achieve sufficient scientific acceptance, attention in dermatoglyphic analysis shifted from the qualitative methods to a quantitative approach. One such method, total finger ridge count, appears to be most useful in the diagnosis of twin zygosity. Although often very similar, the fingerprints of MZ twins are never identical. While the distribution for total finger ridge count in the two groups of twins is different, there is a considerable overlap.[67] Concordance between the two members of a given MZ twin-set for total ridge count is estimated to be approximately 95 per cent, while the figure is only about 46 per cent for DZ twins.[68] Even though recently serious efforts have been made[69] to devise a precise method for the diagnosis of twin zygosity through the utilization of fingerprint data, these methods

[63] J. Malvalwala, "The Heredity of Dermatoglyphic Traits in Nonhuman Primates and Man," *Comparative Genetics in Monkeys, Apes and Man* (edited by A. B. Chiarelli), Academic Press, London, 1971.

[64] F. Galton, *Finger Prints,* Macmillan, London, 1892.

[65] G. Geipel, "Der Formindex der Fengerleistenmuster," *Zeitschrift für Morphologie und Anthropologie,* Vol. 36, 1937, pp. 330-361; E. Essen-Moller, *op. cit.*; H. H. Wilder, "Palms and Soles," *American Journal of Anatomy,* Vol. 1, 1902, pp. 423-441, and "Duplicate Twins and Double Monsters," *American Journal of Anatomy,* Vol. 3, 1904, pp. 387-472; K. Bohmer and F. Harren, "Die vererbung der Papillarlinien und ihre Bedeutung fur den Nachweis der Vaterschaft," *Deutsche Zeitschrift für die gesamte Gerichtliche Medizin,* Vol. 32, 1939, pp. 73-82.

[66] S. B. Holt, *The Genetics of Dermal Ridges,* Charles C. Thomas, Springfield, 1968, p. 36.

[67] S. B. Holt, *op. cit.*, p. 75.

[68] S. B. Holt, "Quantitative Genetics of Dermal Ridge Patterns of Fingers," *Acta Genetica Statistica Medica,* Vol. 6, 1957, pp. 473-476; M. Lamy, J. Frezal, J. Degrouchy and J. Kelley, "Le nombre de dermatoplyghes dans un échantillon de jumeaux," *Ann. Hum. Genet.,* Vol. 21, 1957, pp. 374-396.

[69] D. L. Richter and S. Geissen, "A Statistical Model for Diagnosing Zygosis by Ridge Count," *Biometrics,* Vol. 16, 1960, pp. 110-114; E. Slater, "Diagnosis of Zygosity by Finger Prints," *Acta Psychiat. Scand.*, Vol. 39, 1963, pp. 78-84; W. L. B. Nixon, "On the Diagnosis of Twin-pair Ovalarity and the Use of Dermatoglyphic Data," *Novat'anni delle leggi Mendeliane* (edited by L. Gedda), Instituto Gregorio Mendel, Rome, 1956; S. M. Smith and L. S. Penrose, *op. cit.*

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also proved to be not without defect.[70] It cannot be overemphasized that the utmost caution must be exercised with the use of fingerprints in zygosity diagnosis. Although dermatoglyphic characters are generally assumed to rank next to blood groups in reliability for the diagnosis of twin zygosity, it be best kept in mind that (a) dermal patterns are always, and sometimes seriously, modified by environmental influences,[71] and (b) dermatoglyphics tends to be abused by investigators who do not understand its limitations,[72] (c) the modes of inheritance for dermatoglyphic characters are unknown,[73] and (d) because of their association with crime, frequently dermatoglyphs may prove to be more difficult to obtain than blood samples.[74] In view of this situation, Osborne and DeGeorge[75] emphatically state that the considerable labor which dermatoglyphic analyses entail can hardly be justified for the diagnosis of twin zygosity when other more useful or practical criteria are available.

(5) *Dental comparison.* As an alternative method to the above described procedures, some investigators[76] recently turned to the comparison of the morphological features of dentition for the diagnosis of twin zygosity. The agreement obtained between zygosity determinations based on serology and tooth morphology are reported to be 88 per cent by Wood and Green[77] and 94 per cent by Lundstrom.[78] Wood and Green[79] suggest that the accuracy of zygosity diagnosis based on tooth morphology could well rival the diagnostic accuracy of serology if the genetically determined traits of several teeth are included in the comparison. Unfortunately, to be able to use this method the investigator should be fairly knowledgeable of dental morphology. This latter fact could discourage many an investigator from the utilization of this method.

(6) *Diagnosis of twin zygosity from questionnaire reports.* Although blood typing is the most precise method for the

[70] S. B. Holt, 1968, *op. cit.*, p. 78.

[71] R. H. Osborne and F. DeGeorge, *op. cit.*, p. 35; N. Walker, *op. cit.*

[72] N. Walker, *op. cit.*

[73] S. B. Holt, 1968, *op. cit.*, p. 36.

[74] J. Malvalwala, *op. cit.*

[75] R. M. Osborne and F. DeGeorge, *op. cit.*, p. 35.

[76] A. Lundstrom, *op. cit.*; B. F. Wood and L. J. Green, "Second Premolar Morphological Trait Similarities in Twins," *Journal of Dental Research,* Vol. 48, 1969, pp. 74-78; S. L. Horowitz, R. M. Osborne and F. V. DeGeorge, "Hereditary Factors in Tooth Dimensions, a Study of the Anterior Teeth of Twins," *Angle Orthodontist,* Vol. 28, 1973, pp. 87-93.

[77] B. F. Wood and L. J. Green, *op. cit.*

[78] A. Lundstrom, *op. cit.*

[79] B. F. Wood and L. J. Green, *op. cit.*

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diagnosis of zygosity, according to Nichols and Bilbro,[80] simpler but slightly less accurate methods are justifiable in some research situations. Several investigators[81] claim an accuracy of about 90 per cent relative to the serological method for their zygosity diagnosis made on the basis of the evaluation of mailed questionnaires. Indeed, Nichols and Bilbro[82] go as far as to develop "rules" for the diagnosis of zygosity in using this method. However, as the advocates of this method readily admit, more accurate approaches do in fact exist and should be used whenever feasible.

(7) *Zygosity diagnosis by eliminating dizygosity.* Not being satisfied with the accuracy reached by the use of the serological method, a few investigators[83] utilize a number of other traits in addition to blood groups for their diagnosis of twin zygosity. The traits included are as follows: head hair color, eye color, eye detail pattern, tongue rolling, PTC tasting, ear lobe form, chin form, and the occurance of mid-phalangeal hair. This method again allows for proving the dizygous condition by intrapair discordance in any one of the above traits. The method has the obvious advantage of a very high level of accuracy and a "disadvantage" in the fact that the exact probability in favor of incorrect diagnosis usually cannot be calculated above and beyond the utilization of serological traits. Thus, while subjectively this method assures the investigator of correct zygosity diagnosis, from the viewpoint of statistical accuracy the method is no more reliable than the one based on serology alone.

SELECTED CRITICISMS OF THE TWIN STUDY METHOD

Geneticists do not universally agree on the value of twins in research.[84] Their reservations derive from the four major problems and/or limitations discussed below. There is no particular significance attached to the order of these points or to the length of their treatment.

[80] R. C. Nicholls and W. C. Bilbro, *op. cit.*

[81] R. Cederlof, L. Friberg, E. Jonsson and L. Kaij, "Studies on Similarity Diagnosis in Twins with the Aid of Mailed Questionnaires," *Acta Genetica,* Vol. 11, 1961, pp. 338-362; L. Sammalisto, "The Determination of Zygosity in a Study of Finnish Twins," *Acta Genetica,* Vol. 11, 1961, pp. 251-264; R. C. Nichols and W. C. Bilbro, *op. cit.*

[82] R. C. Nichols and W. C. Bilbro, *op. cit.*

[83] R. H. Osborne and F. V. DeGeorge, *op. cit.*; P. J. Clark, "The Heritability of Certain Anthropometric Characters as Ascertained from Measurements on Twins," *American Journal of Genetics,* Vol. 8, 1956, pp. 49-56.

[84] See for example L. L. Cavalli-Sforza and W. F. Bodmer, *The Genetics of Human Population,* Freeman, San Francisco, 1971, p. 601.

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(1) *The assumption of the method regarding the equivalency of environmental influences upon the two groups of twins.* This point deals with perhaps the most serious criticism of the twins-approach and concerns the requirement that environmental influences be held constant over the two kinds of twins under investigation. In practical terms this means that only those MZ and DZ twin-pairs may be included in the sample in which the average co-twin variation due to environmental factors is approximately equal. Needless to say, to accomplish this is extremely difficult at best, if not outright impossible. Price[85] claims that prenatal differences in kind or in degree regarding the details and effects of placentation, in utero positioning, crowding, disturbances due to mutual circulations in monochorial MZ twins, as well as the specifics of delivery introduce serious environmental biases into most, if indeed not all, twin samples. If and when present, these biases will reduce rather than raise genetic estimates by introducing environmental differences between genetically identical twins. Indeed, Price suggests that all too often such anti-natal biases may account for the results of a sizeable portion of those heritability studies which demonstrate minimal effects of genetic control. Similar problems are encountered in the case of post-natal environmental influences. Operationally, investigators frequently assume *a priori* the equivalency of post-natal influences upon the two groups of twins. Although Vandenberg[86] claims on heuristic grounds that unequal environmental influences upon the two subsamples would have little or no effect on most anthropometric and physiological measures, investigators should check upon the personal histories of their subjects. Despite this, insofar as we are *ad post facto* observers, we cannot be absolutely certain about the exact nature of these influences. Consequently, even the diehard students of twins must admit that the twins-approach has serious limitations, and remains open to valid criticism.

(2) *Sampling biases.* In research simple random sampling should be utilized because statistical tests and analyses usually require the assumption of random sampling. The phrase "simple random sampling" refers to probability sampling without replacement. In operational terms this simply means that every individual must have a known probability of being included in the sample.[87] Consequently, usually a list of the "universe" is

[85] B. Price, *op. cit.*

[86] S. G. Vandenberg, "Contributions of Twin Research to Psychology," *Psychological Bulletin,* Vol. 66, 1966, pp. 327-352.

[87] H. M. Blalock, *Social Statistics,* McGraw Hill, New York, 1960, p. 392.

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compiled and from this corpus individual cases are drawn with the use of some mechanical procedure that will assure equal probabilities of selection. The mechanical procedure most often employed, and perhaps easiest to use, is to consult a table of random numbers and then to draw the cases associated with these numbers. The cases thus selected form the "sample" for the study.

Theoretically, these procedures represent a matter of utmost simplicity. However, as Blalock[88] points out, in most practical research problems this is not the case. In twin studies the first major problem encountered generally concerns the "universe" of the study. Unforseen and unimaginable difficulties may arise during the compilation of the list of twins. Theoretically twin researchers need only to call upon local governments for birth records, school districts for twins among their students, and parishes for the twins among their members to compile an all-inclusive list of twins from a given locality. In practice the situation is much more difficult. Local governments frequently direct the investigator from one office to the next, and from one level of government to the next usually all the way up to the state level. Although this experience may be educational, the investigator will generally be frustrated in his efforts by unknowledgeable and/or uncooperative civil servants whose only apparent purpose is job-security at the expense of the taxpayer. I am sad to say that in many a school system the situation is not better. Usually it is an accomplishment in itself to be able to track down the individual in charge of research in a given school district solely to be informed that they deem co-operation worthy with only those research projects which may in theory or in practice improve their curricula. Such practices obviously attest to the fact that knowledge is not the major concern of some of our educational institutions. Since even our parishes are generally bogged down in bureaucracy, in my experience informal means prove to be the best way to compile a list of twins. These methods involve (a) placing classified advertisements in newspapers, (b) requesting participating twins to provide the investigator with a list of twins from their circle of acquaintances, and (c) contacting such organizations as "Mothers of Twins" in addition to the above mentioned formal means. Obviously these procedures are frustrating as well as slow, and they do not assure that all twins residing in a given geographical area will be located.

A related problem concerns non-respondent, that is unwilling, twins. Many twins, either an entire set or a member of a set,

[88] H. M. Blalock, *op. cit.*, p. 393.

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decline participation in research projects for a number of reasons. Whenever lists are incomplete or whenever a large percentage of individuals must be considered to be non-respondents, we have in effect an example of non-probability sampling. As Blalock[89] points out, the major disadvantage of non-probability sampling derives from the fact that we cannot obtain a valid estimate of our risk of error. Consequently, statistical inference is not legitimate if non-probability sampling is the case. However, this does not diminish the significance of most twin studies in any appreciable manner. According to Allen,[90] no study of twins permits precise quantitative conclusions about the larger non-twin population. Thus, great efforts to secure a complete or representative sample is rather futile and sampling biases must always be assumed in twin studies. Consequently only qualitative conclusions are likely to have general validity, although quantitative conclusions about the twins themselves may be useful and may contribute to hypothesis testing. Nevertheless, twin studies offer unique approaches to a variety of problems not amenable to direct experimentation. As indirect experimentation, however, twin studies should always be designed to test specific hypotheses.[91] Unfortunately, not all research workers follow this important guideline.

(3) *Possible errors and/or shortcomings in zygosity determinations.* For the purpose of most twin studies the twins are dichotomized only as MZ or DZ. This practice could result in a major problem. According to Allen, research workers have consistently disregarded warnings concerning the possibility of a third group of twins which result from irregular fertilization and are genetically intermediate[92] between the MZ and DZ types. If irregular fertilization is associated with twinning,[93] our classificatory practices presently used are not valid. Normal diagnostic tests would generally classify these twins as DZ even though actually they are not. However, it should be pointed out that because DZ twins are not uniformly dissimilar the inclusion of some of these intermediate twin-pairs among the DZ group would produce significant differences in only very precise

[89] H. M. Blalock, *op. cit.*, p. 410.

[90] G. Allen, "Twin Research: Problems and Perspectives," *Progress in Medical Genetics* (edited by A. G. Sternberg and A. G. Berg), Grune and Stratton, New York, Vol. IV, 1965.

[91] R. Platt, "Strong Inference," *Science*, Vol. 146, 1964, pp. 347-353.

[92] For example, dichorionic twins could differ as much as ordinary twins could differentiate through mutation or chromosomal aberration originating in the embryo.

[93] See for example W. E. Nance and I. Uchida, "Turner's Syndrome, Twinning and an Unusual Variant of Glucose-6-phosphate Dehydrogenase," *American Journal of Human Genetics*, Vol. 16, 1964, pp. 380-392.

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analyses. Nevertheless, the inclusion of such twins would decrease the estimate of MZ-DZ differences and at least in theory it raises a major problem for the twin study method.

In addition to this possible error in classification, zygosity determinations frequently fall short of the commonly accepted scientific expectation. The reader is particularly urged to pay close attention to this detail in a given twin study because, in my opinion, this is a frequent source of criticism for the validity of the twins-approach. Biological convention demands a probability level of 0.95 or better for scientific acceptability. Despite this, researchers often report a probability level well below 0.95 for the zygosity determination of their twin sample. Obviously the results of these research reports may be either completely disregarded or may be acceptable only as a hypothesis rather than a proven fact.

(4) *The lack of sufficient specificity in results obtainable via the twin study method.* Terms such as " simple " and " naive " have often been applied[94] to the results of twin studies. This description is somewhat justified. The twins-method is only capable of showing MZ-DZ differences and, as it has been previously discussed, such differences may be best explained by virtue of excess DZ twin variability that derives from dissimilar genetic endowments. However, such a crude estimate of overall genetic control is the only thing that the twins-approach is capable of, and no further refinements are possible with the use of twin data alone. Thus, the twin study method cannot be utilized to descern the specific influence of a given gene or a set of genes. Consequently this approach lacks the relative sophistication commonly associated with certain other genetic approaches. Nevertheless, it needs to be emphasized that even though MZ-DZ twin comparisons do not absolutely demonstrate the genetic picture, still they come very near to that point. For all practical purposes the results of twin studies are in fact acceptable, and the method itself has merit. Although theoretically the nearer we come to meeting this point of criticism the better, it is in fact very unlikely that we will ever get closer to the exact picture. After all twin studies utilize human beings as experimental subjects, and our professional ethics prohibit us from obtaining somewhat more refined results at the expense of unethical practices.

[94] G. Allen, *op. cit.*

ERRATUM

In Vol. XV, No. 3, on page 194, line 8, for " Lucaneans 1672 " read " Lucaneans 1627 ".

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Preliminary Report on the Application of some Pencil-Paper Analysing of the Phenomena Brought About by Acculturation in the Pokomam Area of Guatemala

By AZZO GHIDINELLI and ROSALBA TERRANOVA*

RESEARCH PLANS

As has already been observed, not all the populations of Guatemala react in an identical way to the cultural pressures of the Ladinos. In the highlands, where the Mames, Cakchiqueles, Quiché, and other ethnic groups have their territories arranged one beside the other, the separate Mayan cultures have been preserved much more than in the east amongst the Pokomames, where the indigenous population consists of two ethnic islands involved in a rapid process of acculturation. As well as the ethnographic circumstances, others which are historical in nature must also be considered.[1] In fact, in the case of the Quiché and the Cakchiqueles, who were the dominant population both politically and culturally before the Spanish conquest, the indigenous element endured virtually free from the destructive Spanish influence. It follows that even today, while the Quiché and Cakchiqueles still maintain much of their cultural patrimony, the Pokomames, instead, have a notable inferiority complex in respect to the Ladinos. Thus the cultural relations in the Pokomam area are very much different from those in the highlands.

While the latter region has been well studied, one cannot say the same about the area that we take into consideration, where the only important research that has taken place was carried out by John Gillin, on different occasions between 1942 and 1948. This scholar brought to light the needs and anxieties of both ethnic groups, caused by the lack of certain basic requirements, and his work was a most valid contribution, not only in

* Azzo Ghidinelli is Anthropologist and Director of the Department of American Studies at the Institute for Transcultural Studies, Milan, Italy. Rosalba Terranova is Head Vice-Director of the Psychiatric Hospital at Parabiago and Executive Director of the Institute for Transcultural Studies. The authors wish to thank Steven Forgione for his help in preparing the text and its translation into English. They also thank Professor Cesa Bianchi, Gloria Conteras, Italo Bartolasi and Sandra Seregni for work carried out in the study.

[1] Franz Termer, No. 5 of the "Seminario de Integracion Social Guatemalteca" series, *Etnologia y Etnografia de Guatemala,* Ministerio de Educaion Publica, Guatemala, 1957, p. 39.

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understanding the dynamics of the cultural relations in that region, but also in that he put forward, in a paradigmatical way, the premises for the further works on the process of acculturation.

Since the period in which Gillin conducted his research, San Luis Jilotepeque has changed considerably: trade with the big cities has increased; the Indians have lost even more land; the Ladinos are wealthier; close family relationships have changed; general anxiety has increased; and the relations between the two ethnic groups have certainly not improved.

The characteristics of the ancestral culture of the Pokomames have continually degenerated because of the close contact they have persistently had with the *mestizos*. Not only are Pokomames forced to adapt themselves to the present consumer civilization, which is of North American-European origin, but they are also induced to relent their severe bonds of traditional ethics without which they cannot understand the meaning of their lives. In this deculturation process, alcoholism and malnutrition play a major rôle; from Gillin's time it seems that they have increased by a considerable amount.

Besides an anthropological study of the above-mentioned changes, we wanted to test a new research technique which would demonstrate both the basic structural culture of the Pokomames as well as the traumas brought about by the acculturation process. Thus we applied two kinds of pencil-paper tests — the tree test (Koch's test) and the world test along with a questionnaire which was designed to clarify the most significant data for their interpretation. These tests, as far as we know from previous studies that we have made, had not been carried out before in that region. The questionnaire was interdisciplinarily planned in Italy and tested in the village of El Duranzo in the municipality of San Pedro Pinula. It consisted of three parts. The first was to note the generalities of the subject (name, age, composition of the family nucleus and so on); the second to observe in which way the subject identified himself or herself ethnically, and to what degree he or she was conscious of their cultural identity; and third to write down the observations of the interviewer (physical characteristics and clothes of the subject, behaviour during the tests and completing the questionnaire, and so on).

At this point, it is worthwhile to explain something about the tests to give a clearer understanding of them and their use. Naturally, anyone interested in a more elaborate explanation of their structure and adaptability should contact ITS.[2] The tree

[2] Institute of Transcultural Studies, Piazza del Carmine 3, 20121, Milan, Italy.

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test was used on a large scale and also standardized by Professor Koch of Geneva. It is a projective test to be done with paper and pencil. In drawing a tree, the participant expresses some aspects of his or her personality or, as it is said in psychology, " projects " his or her deep and emotive way of confronting life. Koch records that the reason for which the tree is capable of projecting the subject of his or her personal position in comparison with their lives is due to the fact that the tree has a profound anthropological significance. That is, in the formative processes of cultures, the tree has been always taken as the synthesizing symbol of life. Bound to the earth with its roots and outstretched with its trunk and leafy branches, the tree symbolizes the fundamental antithesis of man who must find a psychological equilibrium between mother-earth and the divine-father-in-heaven, between materialism and spiritualism, between security (the securely implanted roots in the ground) and the continuing struggle with the events of the external environment (the wind and the storms which shake the trees, splitting their trunks and leafy branches), between the dark, the silence, and the slow movement of the underworld, and the light, the stimuli, and lively reproduction on the surface, and so on. Koch used the test to study the development of man from infancy to adult, according to the degree of schooling, the degree of intelligence, and the normal or upset psychological state. He used the test during some techniques which provoked an alteration of the psychic state, such as the hypnosis technique, amongst cases of mental deficiency and psychotic and neurotic illnesses, and amongst African students in Switzerland.

As is known, the test has found a great application in the field of psychiatry and to a much less degree in the field of psychology. Today it is much less used than 60 years ago when Koch propagated his studies, because many other tests (both in psychology and in psychiatry) were prepared and held more suitable to the trends within the technological society. In particular, psychology tries to select valid people to study how they react in a productive society to the stimuli and demands of industry, to the urbanization and consumerism, and to do research and point out the mentality adopted to standardized work.

We use the tree test better to understand the personality and mental attitude of adults in diverse cultures. No study has been done of this sort and probably because official science has not taken into consideration the relationship between personality and culture and did not need to adapt the laws of development to the psychological-cultural needs of the person. On the other hand, the studies on the relationship between personality and

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culture have remained in the realm of anthropology as a closed discussion or often tied to cultural islands far removed from the problems increased by development and underdevelopment. Often, too, they are removed from the socio-political modifications caused by a brutal ex-colonialism or neo-colonialism or often still preferred to so-called " exotic " cultural areas, while quite diverse cultures exist even in technological societies which are crushed by the major culture, endowed with power, which imposes impossible developments on them.

This study which we have undertaken is of an interdisciplinary type because it is a close collaboration among psychology, sociology, and anthropology, putting clearly the attitude of individuals who comprise the cultural group and not just the group because it is from the whole of the individuals that the characteristics of the group with its stability and crises are born.

The use of the tree test is part of the method applied to the development of the research. Naturally, it cannot be isolated from the other tests, such as the world one, and the other techniques appertaining to the sociological and anthropological disciplines which complete the research on the cultural factor of the personality.

The Institute reiterates that the tests must be well understood in order not to commit errors which would make them unmeaningful. It must be correctly and consistently applied to make a transcultural analysis possible; that is, between one culture and another.

THE COLLECTION OF DATA

The collection of the data was carried out between August and December 1971. First in San Pedro Pinula; then in El Duranzo, where the natives have already lost their vernacular language; at Pansinguis and Mampacaya, easily accessible rural villages (mostly Pokomam); then at San Luis Jilotepeque, a major socio-cultural centre of the Indians, where a third of the population is Ladino, and where the ethnical conflicts crystallize; and lastly at Camarón, the most isolated rural village, where we believed we would find Indians with only a minor degree of acculturation.

At the Dirección General de Estatistica, the most recent demographic data available were from 1964, and they were without precise indications on the age pyramid per ethnic group; thus the sampling was approximate.

At San Pedro Pinula and El Duranzo the tests and questionnaires were applied without any particular problems, but at Pasinquis we came across great difficulties because the village

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consisted of a well-scattered group of huts, and the Indians, who were not used to dealing with foreigners, were not easily approached. It took only a few days in this village, however, to realize that the economic, religious, and social life of these people centred around San Luis Jilotepeque. In fact, every Sunday they went to the capital of the municipality in order to go to the market, to attend church, and to visit their friends: San Luis Jilotepeque has preserved the same function as the pre-Columbian ceremonial centres.[3]

Thus, we stayed in San Luis Jilotepeque for two months, and it was here that we applied most of the tests and questionnaires. There, 147 tests and questionnaires were collected from the Indians, and we tried to balance the groups by age and sex. Part of the collection was made at the parochial night-school, and the remainder at the temporary headquarters of ITS, where a medical center had been set up, and where the patients, before being seen to, were asked to complete the questionnaire and do the tests. All males were also asked to answer a questionnaire on agriculture.

The period for the collection of the data ended after 15 days in El Camarón, but we were able to collect about 30 questionnaires and tests even though it is the most isolated village in all the Pokomam area.

To collect the data, the subject was first asked to answer the questionnaire; he was then given a sheet of paper and a pencil and asked to draw a tree; then on another sheet the world. While the subject was drawing, the interviewer made observations on his or her behaviour and on the environmental conditions.

By this same method, 36 questionnaires and tests were also collected at the prison in Jalapa, and a further 50 in the schools at San Luis Jilotepeque and San Pedro Pinula. The questionnaire was adapted for the students by adding the request for a composition entitled, "What I'd like to be when I grow up." These compositions, together with the tests, should serve to find out the cultural direction and imagination of the student population of the two main municipal centres.

ELABORATION OF DATA

At present, as we are writing this report, only the data from the questionnaires have been elaborated and a part of those from the tree tests. No work has really been done yet on the

[3] Azzo Ghidinelli, "Urbanismo dei centri maya," *Terra Amiga*, 1972, pp. 23-24, 23-30.

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world tests,[4] and neither on the material gathered in the prisons or in the schools.

The tabulations have been carried out using the common statistic techniques; but it is not our purpose to give details on this. We shall, however, resume with the double-entry tables which result from the elaboration of the questionnaires:

(a) *Age groups:* From a total of 215 interviewed, about 50 per cent were between ten and 24 years old, 25 per cent between 25 and 40 years of age, 15 per cent between 40 and 54 years of age, and 10 per cent over the age of 55 years.

(b) *Sex:* 55 per cent of them were male and 45 per cent female.

(c) *Professions:* 51 per cent were farmers and 44 per cent housewives and ceramists. The remaining 5 per cent consisted of domestic servants, salesmen, teachers, and those with various other male occupations.

(d) *Degree of literacy:* 40 per cent of those interviewed were illiterate, and 45 per cent semi-literate (they could read a little and write their names). The remainder had studied beyond the third grade.

(e) *Structure of the family nucleus:* 52 per cent of those interviewed lived with their mate and their children, and 16 per cent with their first-degree ascendants and older or younger sibling. The structure of the family nucleus of the remaining subjects was diverse.

(f) *Number of members of the family nucleus* (excluding the person interviewed): The maximum frequency (65 per cent) comprised nuclei of between three and seven people, preceded by 17 per cent of smaller nuclei (between one and three people), and 13 per cent of larger nuclei (over eight people). The rest consisted of families with an indeterminate number of members.

(g) *Spoken language:* 67.5 per cent of those interviewed spoke fluent Pokomam; 5 per cent spoke little vernacular; and 24.5 per cent were Indians and Ladinos who spoke only Spanish. For the remaining 3 per cent, it was not possible to determine whether they know Pokomam.

(h) *Response to the question, "Why do you speak Pokomam?":* 20 per cent of the 158 Pokomames who spoke their language answered that they had learned it from their parents; 18 per cent stated that they spoke it simply because

[4] One thing was quickly made evident — a "square" world with probable pre-Columbian characteristics was drawn several times which reflects the ancient Mayan cosmic vision. Circular worlds were drawn frequently but sometimes it was clear that it was a projection of a partial acculturation and not by belief.

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they were Pokomames; 16 per cent said it was their habit; and the rest gave only vague or indeterminate answers.

(i) *Indian or Ladino?*[5]*:* Of the 215 people interviewed, 183 (85 per cent) declared that they were Pokomames; 25 (11 per cent) Ladino; and only seven (4 per cent) did not want to answer, or else gave ambiguous replies.

(j) *What distinguishes an Indian?:* 30 per cent stated that the language was the principal characteristic of distinction; 15.5 per cent gave more importance to clothes; other characteristics declared were, in order of importance: race, filiation, "we are poor," the way of living, and others numerically of little importance.

(k) *What distinguishes a Ladino?:* The most important distinction (28 per cent) results from the fact that the Ladinos do not speak Pokomam. Apart from this follows a long list of characteristics of low frequency. The women, who in everyday life are less in contact with the Ladinos, replied more often than the men that they did not know.

(l) *Behaviour and attitude during the tree test:* 32 per cent of the 215 people who afterwards carried out the test, before beginning to draw, objected to that because: they were not capable; they did not know how; they did not want to; they had not gone to school; they could not see; their hands shook, etc. Only 15 per cent took it with confidence and without comment.

A crosswise analysis of the questionnaire allowed an underlining of various frequencies (Table 1).

For the tabulation of the tree test we have followed Koch's method, completed by the most recent analysis.[6] First of all, the analysis of the special symbols was carried out according to Grunwald-Koch with the result that out of 27 tests done by Ladinos, 52 per cent of the trees were drawn on the top half of the graph, and amongst these 37 per cent were situated on the left-hand side (the drawing was situated on the diagonal that Koch calls the "zone of passivity, the space for life's onlookers").

Of the trees drawn by the Pokomames under 20 years of age, 69 per cent also were found on the top half of the graph; the percentage drops to 38.5 amongst the adults of the same ethnic group. Similarly, the decrease in the number of drawings situated in the left half of the graph drops from 63 per cent to

[5] The question was asked: "Vd. se considera natural o Ladino?" The word native is not precise and we use the word Indian for lack of another word.

[6] Rosalba Terranova and B. Ratzifandriamanana, "Test montaux et psychiatrie transculturelle," *Psychopathologie Africaine,* Vol. 5, pp. 123-132.

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TABLE 1

	2a	2c	3a	3b	4a	4c	5c	6a	8a	9a	9h
1a	9	6	1	21	—	17	5	14	19	11	4
1b	29	10	5	38	2	35	13	32	42	22	2
1c	14	6	10	10	20	2	3	17	23	13	2
1h	12	3	16	2	14	—	7	16	20	5	2
2a	—	—	38	57	37	29	23	76	95	38	23
2b	—	32	33	31							

Code

1a: age from 10-14 years
1b: age from 15-20 years
1c: age from 20-24 years
1h: age from 45-50 years
2a: farmers
2b: housewives
2c: ceramists
3a: illiterates
3b: semi-literates
4a: family nucleus comprising mate and children
4c: family nucleus comprising ascendants of first degree and older and younger sibling
5e: family nucleus composed of five people
6a: Indians who spoke their language (Pokomam)
8a: those interviewed who considered themselves Indians
9a: language considered as an element to distinguish an Indian from a Ladino
9b: the way of living is held to distinguish an Indian from a Ladino

27 per cent, and those that are found in the diagonal segment of passivity from 42 per cent to 19 per cent. Still amongst the natives, the frequency for the trees resting on the intersection of the diagonals was found to be 14.6 per cent for subjects under 20 years of age, and 24.2 per cent for those of a higher age group; and for those in the bottom half of the graph, the corresponding figures were found to be from 2.6-15 per cent.

The height of the trees varies from a minimum of 10 m.m. to a maximum of 340 m.m. For the Ladinos (a total of 27) there are no cases of significant frequency — 59.2 per cent of the male Indians drew trees measuring from 20 to 30 m.m.; among the female Indians the frequency is more dispersed, but in general, they follow those of the males.

The ratio between the height of the trunk and the height of the crown varies from 0 (when there is no trunk) to 2.7 when

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the trunk is high and there is a small crown. Here also, the frequency amongst the Ladinos is very dispersed, but among the 116 male Indians, the maximum (40.6 per cent) is found between the indices 0.60 and 1.1. The figures for the women are not much different from the men, though it should be pointed out that 22 per cent of their trees have been rejected because they reproduced the identical floral designs found on their pottery; also 14 per cent more were rejected because the index is very small — between 0 and 0.1 (small trunk, large crown).

The tabulation of the ratio between width and height of the crown (wc/hc) showed that most of the tests (58.7 per cent) of all the ethnic groups are valued between 0.7 and 1.5 — values slightly higher or lower than 1, when height and width are the same.

The analysis of the roots brought to light that 60 per cent of the trees drawn by the Ladinos are without roots; of all the Indians this type is represented by only 32.5 per cent. Notable differences were found between the sexes; in fact, 13 per cent of the women (Indian) drew roots like hooks (Figure 2), against 3.8 per cent of the Ladinos, and 2.5 per cent of the men of the same ethnic group. Other roots, figuring mainly amongst the Pokomames, are those which are either all straight or irregular; 14 per cent are of uncertain classification.

The analysis of the branches in the tests done by 195 male and female Indians revealed that 54 per cent of them were pointed upwards. The natural shapes, such as where the branches are easily recognizable, are found in 44 per cent of the examples, while those that are not natural have a frequency of about 30 per cent; 20 per cent of the branches have no leaves; in 26 per cent of the examples they are evident; and in the remainder their existence is assumed.

The separate examination of the men's (113) and women's (82) tests show several differences and several significant similarities; in fact, for both sexes, upward-pointing branches are prevalent (57.7 per cent men, 50 per cent women), but amongst the men a branch drawn with a single line and with natural shapes is much more frequent than amongst those drawn by the women (52 per cent and 51 per cent men, 39 per cent and 35 per cent women). This is explained by the fact that many female ceramists reproduced the decorative designs from their pottery. The drawings that did not represent, in a strict sense, a tree, increase in frequency from 14 per cent amongst the men and 24.5 per cent amongst the women. In the same way, the stereotypes which we will call repetitious rhythmic forms, decrease from 35 per cent for the men to nearly 21 per cent for the women. There are actually no ornamental designs

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among the men, though amongst the opposite sex they reach as much as 25.5 per cent. The same phenomenon is observed regarding the flowers and leaves (9 per cent men, 21 per cent women), while those trees that have leaves are represented in about the same proportions for the two (25 per cent men, 29 per cent women). Lastly, among the men the non-authentic (non-natural) shapes are slightly more prevalent (32 per cent as compared to the 26.7 per cent by women), as is also the case with branches without leaves (36 per cent men, 18.3 per cent women).

An examination of the ages also brings to light notable differences. In fact, out of 72 male Indians over 20 years of age, 58.5 per cent drew trees with a natural shape, while out of 41 male Indians under 20 years of age only 39 per cent drew trees with branches; on the other hand the non-natural shapes increase with age. The same difference is noted in regards to the presence of branches, the adult men showing a greater frequency (60 per cent as compared to the 39 per cent by those under 20). As previously seen amongst the men, the branches arranged in parallel pattern increase with age (from 2.5 per cent for those under 20 to 28 per cent for those over 20).

In a comparative study of the various ages from the maximum frequencies for both sexes, we can show some categories along with corresponding frequencies (see Table 2).

Likewise, a crosswise analysis of the branches has shown some important frequencies, expressed in absolute numbers, on 195 Indians (see Table 3).

From the tables listed, we can observe that out of 195 tree tests, at least 68 present upward-pointing single-line branches; 60, which assume authentic forms, have single-line branches;

TABLE 2

		On 75 subjects male and female under 20 years of age	*On 120 subjects male and female over 20 years of age*
8b	without branches	36.0%	7.5%
8c	single-line branches	37.5%	57.5%
8m	parallel branches	5.35%	27.5%
8o	upward-pointing	442.75%	61.5%
8r	non-authentic shapes	25.0%	32.5%
8s	authentic shapes	29.2%	54.5%
8t	shapes with definite leaves	24.0%	28.5%
8u	branches without leaves	5.35%	43.3%
8v	shapes without clearly drawn leaves	28.0%	7.5%

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TABLE 3

	8j	8m	8o	8r	8s	8t	8u	8x	8alfa
8c	16	27	68	28	60	30	31	6	13
8h	3	4	10	11	14	8	12	—	—
8j		4	13	6	13	5	9	—	1
8m			27	13	21	5	21	—	—
8o				27	50	21	33	4	10
8r						11	17	2	8
8s						21	31	3	5
8y								12	4

Code

8h — twisted branches
8j — forked branches
8x — ornamental designs
8y — stereotypes
8alfa — branches with leaves and flowers added

TABLE 4

Categories		*75 males and females under 20 years*	*120 males and females over 20 years*	*82 females*	*113 males*
9a	closed crown	56.0%	7.0%	26.0%	24.6%
9b	open crown	44.0%	93.0%	74.0%	75.4%
9g	crown with repeated motif	42.6%	28.4%	34.0%	33.5%
9l	inclined to the left	13.4%	20.0%	17.2%	17.7%
9m	inclined to the right	52.0%	40.0%	31.8%	54.0%
9n	centered	22.5%	28.6%	24.5%	27.5%
9c	falling to left	20.0%	22.5%	12.2%	28.0%
9r	unclassifiable	18.7%	15.0%	16.4%	22.0%

30 present single-line branches with evident leaves; and 31 single-line branches without leaves.

It is noticeable that in 50 cases the branches are pointing upwards, assuming an authentic form, while in 38 cases the branches pointing upwards are without leaves.

The analysis of the crown shows that out of the 195 Indians, 71 per cent drew open crowns while the remaining 21 per cent drew closed crowns. Repetition of a particular motif was observed in 33.8 per cent of the cases. It is also notable that the crowns are more often inclined or accentuated to the right (44.5 per cent; centered 26.25 per cent; and 21.5 per cent falling to the left).

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An examination of age and sex revealed these more notable frequencies (see Table 4). As can be observed from this table, the closed crowns are prevalent amongst individuals under 20 years of age, whereas amongst the adults the open shapes are absolutely predominant. Even though the closed or open arrangements vary with age, there is no great variation with sex as the criterion. The repetition of any motif is also most frequent amongst younger people. Crowns inclined to the right seem to be prevalent amongst the men. Crowns inclined to the left and those in the center seem to be more or less constant without any notable variation due to age or sex.

Nearly all the adult subjects drew the trees without including scenery or background; amongst those under 20 the frequency of background is 4 per cent. Trees without a ground line are abundant, with a frequency of 47.5 per cent amongst those under 20 and one of 80 per cent amongst the adults. Of those under 20, when the ground-line exists it is a simple continuation of the base of the trunk; this type of ground-line is found amongst only 4 per cent of the adults.

Amongst the young people, a ground-line pointing to the right is predominant (22.5 per cent), whilst amongst the adults a frequency of only 5 per cent is observed. In all, 45 per cent of those under 20 drew the ground-line sloping in both directions. The corresponding figure for the adults is only 15 per cent.

Despite the clear order to draw simply a tree, 16.4 per cent drew more, adding sometimes birds and quadrupeds. What is perhaps more surprising is that the highest frequency (20.8 per cent) is amongst the adults.

PRELIMINARY INTERPRETATION

It is still impossible to draw a valid interpretative conclusion from the tests of the Ladinos and we have to limit ourselves here to a synthesis of the tests concluded with the Pokomames. On the statistically elaborated tests, significant data show clearly the following facts: fundamentally the tree is small, with a proportionally large, round, and open crown which tends to incline to the right. The roots are always drawn and filiform; the ground-line, if represented, is inclined.

The first group of observations outlines a Pokomam physical dynamic characterized by self-control which leads to an inhibition of their own expressive possibilities which would be, if used, both good and effective. This is seen by the wide and open right-turned type of crowns drawn by the Indian youth. The need for security explains the presence of the roots, whilst the inclined soil measures the amount of anxiety and instability

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that the Pokomam is subjected to in his or her real life. Our experience shows that the filiform roots appear frequently amongst agrarian people and also amongst people who have an ability for a primary relationship with reality:[7] the roots always end as well deep-rooted filaments in the ground, and therefore we do not believe that such a graphic element is, as Koch declares, a sign of a defective development of the personality.

The examination of the spacing placement indicates the frequent use of the left half of the sheet of paper. Progressively, from youth to adult, the percentage of the placement in the upper left-hand side of the paper moves to the lower left-hand side. That is, besides confirming the self-control of the physical dynamic and the tie of reality with the soil, it underlines that the will for tension, which is vital to youth, ceases in the adult hand-in-hand with his or her experiences in life. The datum could be tied either to the peculiar characteristic of the Pokoman or to the socio-cultural frustration present in Guatemala amongst all the Mayan people.

An example of the depression caused by frustration is the high percentage among the male Pokomames of trees without leaves (Figure 1); also in this case the percentage rises with age. It is noted that a certain reproduction of the ecological environment is often used in the test and here the lack of leaves appears much more dramatic if we consider the rich local vegetation which is not exposed, moreover, to periods of defoliation. The Pokomam does not know a bare tree and the need to symbolize it by pure imagination is therefore tied to the depressed situation of his frustrated personality. The collected tests also indicate a survival of their own cultural values and are expressed only through the projective psychic mechanism of the test and not through visible behavioural proof. The interjection on the subconscious level of the cultural values is consequently a present dynamic factor important to the Pokomam psychism.

The culturally significant graphic elements are: the ornamental design, the "hooks" or the substitutive volutes of the roots, and the pattern of a design joined by other figures to the drawing of the tree. It should be added that such elements are more frequently found amongst women, who are inhibited from social intercourse and less stimulated by the social relationships. Their behaviour, jotted down during the interview, confirms such an attitude which significantly allows the conservation of the original culture such as their typical work as ceramists. The graph on the "hook" (Figure 2) concerning the roots

[7] Rosalba Terranova and B. Ratzifandriamanana, *op. cit.*

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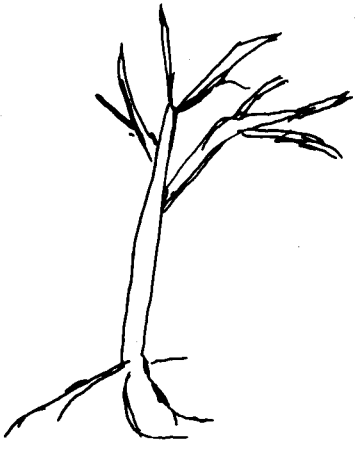

Figure 1.

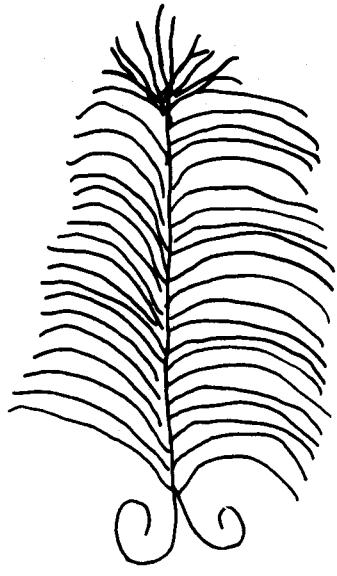

Figure 2.

E

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appears especially significant because it is completely symbolic of and a substitution for reality. In order to interpret this report as such, as with others, it is necessary to refer to the cultural productions of the pre-Columbian period and the massive and extremely strong Spanish influence during the colonial period. As far as the addition of other figures to the drawing of the tree is concerned, it should be remembered, as in the case of the filiform roots, that this does not involve any infantilism as Koch expresses it. The phenomemon is still based on an increased tie with reality which is symbolically cultural or real. In fact, contrary to what takes place in Europe, the Pokomam boy does not draw other objects together with the tree; while it does occur with the adult who develops with the passing of time an always greater perception of the real on one hand and a social frustration on the other one. An appropriately chosen use of the tests appears therefore as an interesting working tool to objectify the transcultural phenomena in an interdisciplinary collaboration with anthropology and sociology.

FIGURE 1: FERNANDO

He is 30 years old, semi-literate, a farmer, and lives in the town of San Luis Jilotepeque. His family nucleus is composed of his wife and their five children. Even though he can speak Spanish, he claims to use the Pokomam language with the members of his same ethnic group because he can communicate better in it. He considers himself a Pokomam because " that's my race." When asked what are the characteristics which distinguish the Pokomam from the Ladino he replied: " The Ladinos differentiate themselves from us because they speak Castillian; the Pokomames, furthermore, dress differently when they go to work (as well as dressing the same way when going into town), and finally the Pokomam works in the *milpa* while the Ladino dedicates himself to other activities."

Fernando's physical appearance is typically Pokomam: long and thick black hair, dark skin, black almond-shaped eyes, thin lips, and a sparse beard. He wears a very worn-out white shirt and blue trousers. The interview took place at the parochial night-school (to teach basic " reading and writing " abilities) where Fernando assumed a very humble and respectful attitude. The tree is found in the center of the graph and has a height of 99 m.m., a trunk-crown ratio of 0.86, and a ratio of 1.35 between the width and height of its crown. It is completely bare and resting on the ground-line with a heavy inclination to the left, and the before-mentioned filiform roots.

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FIGURE 2: MARIA

She is an illiterate, 23-year-old ceramist Pokomam from San Luis Jilotepeque too. Her family nucleus is made up of her parents, two brothers, and her two children. She works at home. She almost always speaks Pokomam, but also knows Spanish because it was taught to her by her parents. María is aware of her ethnic group, but when asked what distinguishes a Pokomam she pointed out only those characteristics which differentiate the Pokomam woman from the Ladinos: " We speak Pokomam, we make clay, we do not go to dances, we bring the meals to our men in the fields, we are dark skinned." This interview was held in the temporary residence of the Institute for Transcultural Studies. Her physical appearance is purely Pokomam, her dress is instead part Ladino, in fact she was wearing a ready-made outfit and shoes (bought in a store), plus a large black *tapado* (a long shawl worn over the head) and a white necklace. The color of the latter two articles are colors distinctly diverse from the traditional ones worn by Pokomam women.

The pine measures 117 m.m.; the roots take the form of a " hook " which is typically ornamental and the branches are of the repetitious and rhythmic motif.

FIGURE 3: MARCOS TULIO

He is a 20-year-old, semi-literate Ladino farmer from San Luis Jilotepeque. He rents his land from a richer Ladino and in the evening goes to the parochial school to learn to read and write. At home he lives with his mother, brother, and a younger sister. He considers himself a Ladino because he cannot speak Pokomam and, in fact, according to him the Pokomames distinguish themselves from the others by their language, manner of dress, and attitudes.

His features show that racially he is a *mestizo*. His style of dress is Ladino: white shirt, black trousers and shoes. The color shows that he took the effort to dress well for the occasion (night-school), but his clothes were very dirty. His moustache was well trimmed and shows an attempt to distinguish himself from his Pokomam companions.

Under his drawing of a tree he wrote: " This is a little palm tree." That reproduced here is in its original size. Its height is 45 m.m. with a trunk/crown ratio of 0.75 and the crown has a width/height ratio of 2.18. The drawing is situated in the upper half of the graph slightly leaning to the left in such a way that the branches cross the diagonal of passivity. It does not have roots; the trunk has a straight and closed base and resembles

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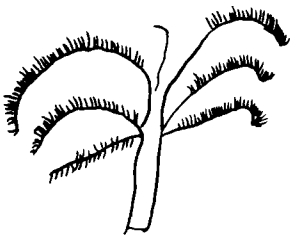

Figure 3.

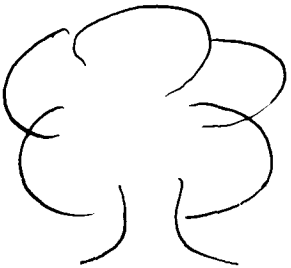

Figure 4.

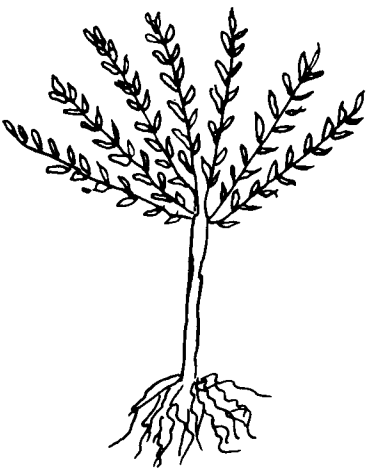

Figure 5.

Figure 6.

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the half-trunk S of Koch even if its top is open. The trunk slightly leans towards the right. The trunk's lines are parallel and empty between them (containing no other lines or drawings within). The branches are done with one stroke with the shapes of palm leaves corresponding to the object which Tulio wished to present; it therefore implies a natural or authentic form with the leaves' lines clearly evident. In its entirety the crown is centrifugal in that its branches have a focal point from which they radiate outwards. It is also flattened and centered, but falling to the left. The drawing has neither any description of scenery nor a ground-line.

FIGURE 4: ANSELMO

He lives in Sanarate and is a Ladino assistant to the Section for Adult Education of the Community Development Plan. He has completed seven years of school and is 31 years old. His family is composed of his wife and their three children. He claims to know a little Pokomam because he lived in San Luis Jilotepeque for a long time, but he identifies himself as " Ladino," as only 3 per cent of Sanarate is Pokomam. According to him, the Pokomames are recognized by their language, dress, physical appearance, and by style and way of life. Anselmo, by his physical characteristics, is definitely a *mestizo*; even though he is light-skinned and has very black and sleek hair. Also his clothes and manner of speaking are Ladino. During the interview he was very cordial and willing to co-operate. He did the tree test quickly and without objections, but wished that it be interpreted right away.

Anselmo is the brother of the pastor and just a little bit before taking the tests he gave a talk to the pupils at the night-school, which was quite ethno-centric and traumatizing.

His tree has a height of 56 m.m. with a trunk/crown ratio of 0.18 and a height/width ratio for the crown of 1.38; it does not have roots. The trunk has a wide and open base; it is straight and cinical with an open top with regular lines having nothing drawn between them. The crown shows no branches or leaves and is a closed shape, an " empty cloud " shape, and is drawn in a repetitious arc motif. The crown in its entirety can be considered centered in respect to the trunk. The drawing does not show some description of scenery and the base is fused to a ground-line which is quite strongly inclined to the left.

FIGURE 5: MARTA

She is a young Pokomam (19 years old) who makes pottery and does housework for her husband and their two children in

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San Luis Jilotepeque. Marta has gone to school for three years, but had to repeat first grade twice. Even though she cannot speak Pokomam, because her parents never taught her, she considers herself Pokomam by blood. When asked what characterizes a Pokomam, she answered by making references to particular parts of their clothing. She personally was dressed in Ladino clothing, but it was adapted to the Pokomam style of dressing. Her physical appearance was clearly Pokomam and her knowledge of Spanish was mediocre. She did the tree test with confidence and without objection, but however remained hesitant before beginning the world test; she finally drew a stereotype figure of a *quetzal* found on the Guatemalan flag.

She drew a tree 79 m.m. high in the middle of the sheet with a trunk/crown ratio of 0.7 and height/width ratio of 0.92. The branches were drawn with one stroke going upwards and assuming an authentic shape with very clearly drawn leaves; the crown is taken as centrifugal with the leaves and branches drawn in repeated style, all slightly moving to the left. The top and base of the trunk are open and there is no scenery or ground-line.

FIGURE 6: MOISES

Moisés is a Pokomam from San Luis Jilotepeque and goes to the parochial night-school. Previously though, he had completed two years of elementary school. He is 16 years old and works with his father on their family plot rented from a Ladino. His family is made up of his father, mother, and two brothers. Moisés says he is Pokomam and speaks the language as only they speak it and must do so from birth. When asked why he considers himself Pokomam, he replied: "Because our Lord made and left us this way." According to him a Pokomam distinguishes himself or herself by the fact that they speak the two languages of San Luis Jilotepeque and by their upbringing. As regards his belonging to his ethnic group, Moisés has a very strong consciousness of his status and with an almost complete resignation and frustration at being a member of a group from which he will never be allowed to leave because he is marked as one of them; it is the consciousness of being a member of the lowest caste rather than an ethnic group.

Physically Moisés is clearly a Pokomam: he has sleek, shiny, and coarse black hair, very dark skin, black almond-shaped eyes, flat and broad nose, and thick lips. He wears a bright rayon shirt which shows his deep anxiety to distinguish himself from the others. His knowledge of Spanish is very good and helped out during the giving of the tests.

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His tree, drawn in its original size, was drawn in the left half of the graph on the horizontal median of the sheet, as if to witness his introvert character; the diagonal line of passivity was cutting through the crown. The trunk/crown ratio is 0.39, while the ratio between the width and height is 1.12.

Moisés's tree does not show any branches as is the case with 20 per cent of Pokomames under 20 years of age. The crown is clearly concentric and the whole tree is a repetition of small marks whilst the trunk is very conical in shape.

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Religion as Meditation: The Priest's Bid for Social Power

By RICHARD G. SWARTZBAUGH

> Der Staat kann es nicht dulden, dass der Mensch zum Menshchen in einem direkten Verhältnisse stehe; er muss dazwischen treten als —*Mittler,* muss—*intervenieren.* Was Christus war, was die Heiligen, die Kirche, das ist der Staat geworden, nämlich "Mittler". Er reisst den Menschen vom Menschen, um sich als "Geist" in die Mitte zu stellen.
>
> The State cannot tolerate that man stands to man in a direct relationship: it must step between them as *mediator,* must *intervene.* What Christ was, what the holy men and the Church have been, the State has become, namely "mediator." The State tears man from man in order to interpose itself as abstract intellect (*Geist*) in the middle.
>
> Max Stirner.

The Latin word *religio,* from which we get our word religion, derives from *religare,* to re-link. Religion may be construed in these terms as the interpersonal tie which cuts across organic or instinctual groupings of kinship, tribe and race. The religious community as such is symbolic and abstract and outside closely knit traditional groups. Yet in being outside them it can also function as a mediator to span the gap between them. Even primitive cults have this mediating purpose. Turner says of the Ndembu of Rhodesia: "Membership in a cult such as Isoma [a Ndembu fertility cult] cuts across even tribal boundaries, for members of the culturally and linguistically related Luvale, Chowe, and Luchazi tribes are entitled to attend Ndembu Isoma rites as adepts, and as such to perform ritual tasks."[1]

Religion as a symbolic link may assist in consolidating real political and economic associations or even in expanding them. Religion supplies a fiction of social cohesiveness to groupings which are essentially objective or extra-social. No astute political leader is blind to this rôle of religion. The symbolic equalitarian bond of side-by-side may re-enforce a structure of above-and-below. There are divisive conflicts between superior and inferior castes and classes which can to some extent be overcome with an

[1] Victor Turner, *The Ritual Process: Structure and Anti-Structure,* Aldine Publishing Co., Chicago, 1969, p. 14. Turner's point concerning the Isoma rite is that it re-affirms a woman's relations with her matrilineal kin group, which she tends to forsake when she moves to the village of her husband. Without the will of her matrilineal ancestors, spirits thought to cause pregnancy, she will be barren. The structural discrepancy between matrilineal descent and virilocal residence constitutes a perpetual source of instability and friction among the Ndembu.

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ideal of unity. But primarily religion helps to stabilise relations between factions, classes, regions and races which would otherwise have divided allegiances. In orienting themselves towards a single superhuman and supernatural authority, diverse groups are often more suspectible to a centralized human political power.[2]

But the political usefulness of a religious community assumes that its outlines follow those of an actual or at any rate a desired political society. If the religious group is too restricted, as the Christians were at first and the Jews have always been, the religion is persecuted. Indeed the Jews and Christians have constituted communities that were and still are both too narrow and too broad: they have sometimes hesitated to fight for their political order against symbolic "brothers" outside it. The Irish Americans sided with Catholic Mexico during the Mexican War but they have always fought with fanatic zeal for Ireland. In fact the desire of political leaders for the conformity of religious boundaries to territorial boundaries is seldom realized.

The alliance between ruler and priest is consequently a suspicious and schizophrenic one. In its underlying nature, religion is in competition with the political order. Even where religion and politics are functionally united in a single ruler-priest, there may be a tension between this individual's desire to extend his abstract power universally and, on the other hand, his urge personally to involve himself with subjects of his own culture and race and to express their national sentiments, values and ambitions. Of course organic and tribal relationships between ruler and subject and among the subjects themselves nearly always prevail against mere symbolic ties. Even economic and military associations, which are grounded in an objective purpose and as such are non-tribal, may override religion. The failure of religion to achieve absolute authority rests in its essentially negative or *compensatory* function. The appeal of symbols is greatest where the political order is detribalized and artificial;

[2] The cities of the Fertile Crescent brought together different pagan religions to make of them world religions. C. D. Darlington, *The Evolution of Man and Society*, George Allen and Unwin, London, 1969, pp. 98, 102-3, says of Sumer and Babylon: "Mythologies were fused; the regional gods and goddesses of warring ancestral tribes were united in relatively harmonious families whose pedigreed members had the diverse and specialized duties and professions which the ancestral peoples had contributed to the new complex society. Rituals were elaborated and suitable to the needs of contrasted classes. . . .

"As the empire based on Babylonia grew, the priests added the gods of one city to those of another, extending the national pantheon. In doing so they would insist that corresponding gods were in fact the same god. . . .

"It was thus the continuing work of the priesthood and the framework of their religion which made possible the achievement of a multiracial stratified society. . . ."

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and where objective alliances, although desired, are not grounded in mutual purposes important enough to overcome strong national, racial or personal antipathies. The social order must be re-enforced with symbols where organic ties are lacking.

But in the short run the priest (or priestly function) may earnestly vie with the ruler. The power of the priest is this: he has a special potent but non-political and non-economic influence inherent *in his rôle as mediator*. This is a power which may with greater or lesser precision approximate political power but is essentially different from it. Church and state are in principle separate. The priest has a special influence and dominance over society in general by virtue of his standing *outside* the particular, discrete, sections of it. The more separate and "alienated," short of unwanted warfare, the communities are, the more conscious the groups are of the distinctness and yet spatial closeness of each other; the greater then is the importance and dominance of the priest. The priesthood takes root in the crevices between communities. It flourishes as these gaps are deep and yet, for one reason or another, are unwanted. The priest as the eternal outsider, whose frequent alienation and "deviation" from personalistic groups can functionally be called transcendence,[3] creates his own symbolic and artificial community and invites everyone in. They come only unwillingly and when they have to. The priest is at home only in a symbolic society where everyone else is an outsider.

The Catholic Church owes its evolution to the fragmentation of Europe during the breakdown of Roman political organization. And despite its impressive internal hierarchial structure the Church has not even now lost its mediating rôle. Darlington says: "The Church, by its education, its interest in scholarship, its hierarchical discipline and attenuated family connection, was able to give unity to its genetically diverse components greater than that of secular society. It was, for example, able to open the way to social promotion for the children of poor parents, as especially for the bastard children of class crosses. . . . The Church was able and willing at every level to impose its own interest in social harmony on the class conflicts going on outside it."[4] Hence, following Darlington's analysis farther, the Church imposing a symbolic unity on a fissile European society developed out of the irregular biological crossing over the caste barriers

[3] In certain primitive societies the priest, whose unique sensitivity and artistic flair may in part be derived from or enhanced by homosexuality or epilepsy, is often set apart from the village circle in an isolated hut. People avoid him except for specific purposes. His location outside the village also puts him between his village and other communities.

[4] C. D. Darlington, *op. cit.*, p. 408.

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dividing that society. The offspring of such caste crossovers were bastards by virtue of the prevailing ethos of the inbreeding groups, which interbred but did not intermarry. Not legitimized, these individuals were dispossessed and alienated from the particular segments.[5] But as outsiders they were in a special position to mediate among the segments. Furthermore the Church drew from celibates of *all* ranks of legitimate society. The celibacy of the priesthood set it apart from particular families and family-type tribal communities without, due to the lack of heirs, itself becoming simply another cohesive clan.* The symbolism of ritual and doctrine brought the diversely derived priesthood† into a special transcendental, ideal unit. This ritualistic status separated the priests from organic, instinctually cohesive society; but the symbols which were a barrier to organic relations provided a bridge or artificial framework between groups which, on account of internal organic cohesion, were cut off from other similarly constituted groups. It gave these groups an ideal "brotherhood of man" to compensate for otherwise "ruinous" regional and caste disunity.[6]

Islam, although not a "priestly" religion, was in its formative stage, through the example of Mohammed, another case in point. Mohammed illustrates starkly those qualities which make a man a religious leader: universality and alienation. Mohammed was born in Mecca probably of mixed parentage, his father and mother being apparently of separate tribes settled at Mecca. His father had slave ancestors. Mohammed married a wealthy widow and travelled as a merchant to all parts of Arabia. His descent

[5] Darlington also points out the rôle of bastards in forging great political empires. Also it is interesting to note the susceptibility of these great emperors, for instance Charlemagne, to universalist religion.

As far as the northern peoples, Celtic and Germano-Gothic were concerned, bastardy really did not exist until Christianity imposed monogamy. Even long afterwards it was not a bar to succession in the Celtic and Norse worlds. They were far from dispossessed and alienated from the rest of the community.—EDITOR.

* This requires qualification. In the Celtic countries all ecclesiastical offices were hereditary and not celibate. They were normally from the aristocracy. Mac Gillespie means son of the bishop, MacNab, son of the abbot, MacTaggart, son of the priest, Macpherson, son of the parson, and so on.—EDITOR.

† In the Middle Ages most or all the higher priesthood were from the aristocracy, and that was still the position of the Anglican Church, and also, indirectly, in the Church of Scotland, till the beginning of this century. In many parts of Catholic Europe the same situation existed. It was only after the establishment of Maynooth College in Ireland, that a peasant priest class replaced an Irish priesthood which was derived from upper class Roman Catholics.—EDITOR.

[6] Ruinous, that is, in terms of the disruption of objective economic and military purposes.

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from a slave ancestor would likely cause a certain disruption of his relations within his tribe, while his travels would give him a trans-tribal, cosmopolitan outlook. It was precisely this distance or estrangement from tribal society which supremely fitted him to be a leader of all tribes, or what is the same, a mediator between them.

Mecca had sprouted at a point halfway between Syria and the Yemen where a trade route between them was crossed by the track taken by Bedouin nomads as they passed between summer and winter grazing lands. A black stone called the Kaábah had been set there since ancient times to mark the place where tribes could meet, trade and have games without fighting, the same practice as that of the Greeks at Delphi. Mecca was central in Arabia and its population came to be a microcosm of the diverse elements of this land. By the sixth century a small temple containing the idols of all Arabian tribes had been built beside the stone. Pilgrims of diverse tribes came to pray together here, and they brought wealth to Mecca. Now the city was still a settlement of disparate peoples, each inhabiting its own section and engaging in its own special crafts and tasks. However, for the leaders of Mecca and for the heads of local clans, all of which would have the city prosper, polytheism, the worship of all tribal gods together, had become a new universal religion.

Mohammed was a monotheist who worked to bring unity to the tribes torn by war. He saw the attempt must be made at Mecca where the peoples met in peace. He thus told the men of Mecca how to be saved: they should put away the idols of their fathers' people and worship one God. The effect of the message was to attract a following which set itself off from traditional groups by its eating practices: Mohammed ordered that meat offered to idols must not be eaten, and Moslems would thus not eat with idolaters. The voluntary isolation was subsequently reenforced by an outcaste status: they were now a community of suffering and persecution. A non-traditional tribe or breeding group was established and named Unmah, Kingdom of God on earth. The group was finally driven from Mecca and settled in Medina, a rival commercial settlement 200 miles away.

The people of Medina were divided along lines of Arab, Jewish, and hybrid clans. They had no single ruler to govern them and appealed to Mohammed as an outsider to arbitrate their disputes. His success in Medina secured this town as a base for Islam, and from here he ultimately recaptured Mecca.

Mecca dissolved its tribal affiliations, abolished its ethnic idols and gods, and became a universal Arabian city. The law of Mohammed's God replaced tribal law. From then on Moslem expansion was achieved through a core group of original followers

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who polygamously took women of non-Moslems and late converts and reproduced relentlessly. Moreover the old tribal energies of all Arabians were absorbed and directed by this new a-tribal religion which was directed outward, that is, toward non-Arabs.[7]

What is this elusive and awesome quality or essence of priesthood? The priest is first of all a mediator. His symbols pertain to gaps in the cosmic order: between the divine, human and material spheres. The interstices of the life of the individual or the entire society where a transition delineates separate spheres are rich in symbolic content.[8] Hence the rites of passage are properly speaking religious. However, in the present paper I am especially concerned with human relationships, namely, the gaps which open when instinctual, pre-symbolic communication fails: these gaps must be filled with symbols if a relationship is desired. These symbols are the proper domain of the priest.

Men have relationships with one another on two fundamental levels. On the one hand there are instinctual and purely social

[7] C. D. Darlington, *op. cit.*, pp. 327 ff.

John H. Hamer, "Voluntary Associations as Structures of Change among the Sidamo of Southwestern Ethiopia," *Anthropological Quarterly*, April 1967, pp. 73-91, provides an additional source demonstrating the specialized mediating function of world religion. Among the Sidamo of Ethiopia the basic corporate group is the extended patrilineage, which is also the residence unit. Labor for traditional gardening is recruited from this group. However, there is one major exception to this pattern of labor organization: in harvesting coffie, which is a new crop sold for cash on an outside market.

The limited family group is too small for efficient harvesting, and the members tend to bicker in the field. The new harvesting group had to consist entirely of men who could concentrate on their work. Their relations were relatively impersonal. The solution to the labor problem came through associations which arose around the Christian mission.

Christianity was an alien symbolic community which appealed at first mainly to men who were not entirely comfortable in their traditional family groups. As "marginal" individuals they began to associate in their leisure time at the mission. They were generally not kinsfolk. As relative "strangers," the bonds they formed with one another could be mediated through the symbolism of Christianity. But these religious ties also provided the opportunity for the formation of work groups large enough and impersonal enough for harvesting coffie.

In pursuing the abstract commodity money, the associations also did not resist integration into the wider market economy and the modern Ethiopian national society.

[8] My wife and I were listening to a friend, when my wife took out a paper and pencil and began writing what he said. This surprised our friend. The point here is that any transition, especially when unexpected, is preferably accompanied by some kind of "explanation," even when this is merely a verbal ritual. This ritual smooths out the disruption caused by the transition. Symbolism of this kind is "religious" when the mediating "explanations" lack direct reference to everyday experience and states of being, that is, it is "mere" symbolism.

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relationships, whose purest example is the mother's relation with her child. On the other hand there are " objective " relationships, associations mediated through the purpose or objective for which they are formed: symbols are appropriate here. These alliances, which are often organically weak, must be symbolically strong. The symbolic relations are quasi-social ties to support diverse economic and military alliances, but they may also be asserted for their own sake as a kind of moral exercise. It is in this mediating symbolic world that the priest's power lies. Men depend on him socially to cement with abstractions important associations without basis in instincts. Without tribal bonds men cannot have access to one another unless through symbolic gates whose keys are in the hands of priests. The priest is in the interstices of society through which men must pass on their way to one another. It follows that the more important the symbols are to the relationship, the greater the rôle the priest has in it. His influence over the symbolic keys gives him an indirect power over men. He controls men by controlling their symbolic mode of coming into relationship with one another. The priest cultivates an ideal realm which is essentially foreign to the layman, it is even repugnant to him, yet he must navigate in it if he is to make contact with men with whom a deeper, more substantial, relationship is impossible.[9] The ruler or politician, who feels most secure when exerting himself through force of personality, knows that in a racially and ethnically diverse realm (*res compositas*) where men are not attuned to him, his personal power stops and an abstract power must be substituted: hence his alliance with the priest.[10]

The positive rôle of the priest is in rendering symbolic mediation where tribal and personal bonds are lacking. But in so far as his direct power is limited to artificial groups, he is understandably tempted to create groups which are not relevant to broader objective associations.* He also fears the establishment between men of instinctual bonds which render symbolic ones

[9] " A family that prays together, stays together. . . ."

[10] For that matter, of course, the priestly and political powers may be united in one man. This is not, however, to confuse religious and political principles.

* This is not always the case. The *pater familias* in Roman society was priest chief. In Hindu society the Brahmin is racially conscious. Among the Celts the priests were hereditary, and related to nobility. They were dedicated to upholding the tribal and racial order. What the author says is true of modern aspects of priesthood where it has abandoned its close association with the organic structure of society, as in modern times. I think the distinction has to be made between a priesthood which is part of the organic nature of society and the one which is recruited in despite of it.—EDITOR.

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irrelevant. In short, he fears tribalism, the positive bond whose obverse side is "racism." He may actually attempt to undo these deeper organic ties by creating artificial associations which destructively cut across tribal groups. Significantly, "mediate" derives from the Latin *mediare,* to *divide* in the middle. Mediation is a bridge on one level but a barrier on another level. A pastor in Mississippi recently told his white congregation (though with some trepidation) that "a black man who is a Christian is more your brother than a white man who is an atheist." This assertion would challenge the membership to choose between symbolic affiliations on the one hand and instinctual ones on the other.

I heard that in one case like this in Mississippi the pastor's furniture was conveniently on his lawn waiting to be moved when he returned from church an hour later. Elsewhere even in Mississippi the congregations may listen politely. But we may assume that the ritual community will not dominate, disperse and supersede the instinctual group. The pastor has made a bid for power and lost, since his symbols cannot shake off the instinctual values behind them, nor can they be made indispensable to trans-tribal objective associations where these associations themselves are not indispensable.[11]

The priest has recourse beyond simply setting up symbols as alternatives to instincts. He may deliberately disturb personal relations within his congregation, thus forcing it on to a more objective, symbolic plane of communication. Any *outsider* placed in a group who demands symbolic arbitration tends to shift the structural basis of the group from an organic to an abstract level. "Integration" serves to disrupt tribalism. (This type of integration or ethnic shuffling was tried by Charlemagne on the recalcitrant Saxons, by the Maoists on the Han and Mongolian ethnic groups,[12] and by the Russians on the Ukranians: this broad regional mixing, as limited neighborhood and school integration in the U.S., serves the same purpose of the disruption of instinctual tribalism for the sake of abstract super-organization.)

The relationship of the membership to the stranger does not change by virtue of his being brought into the group, but rather the relations between the members themselves change. A person

[11] Delphi, the place where Greeks regardless of region could be at peace, was impartial even to Greece itself: it betrayed the Greeks to the Persians. Its advice to let the Persians in as masters could be interpreted as a religious, mediating gesture of reconciliation. Yet from the Greek's standpoint, which was tribal rather than universalist, the Delphic priests were traitorous. Indeed, in actual fact the priests were susceptible to Persian bribe and were the worst spies.

[12] Amrit Lal, "Ethnic Minorities of Mainland China," THE MANKIND QUARTERLY, Vol. VIII, No. 4, April-June 1968, pp. 171-189.

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of a vastly different race or culture can be " integrated " into the physical space of the congregation, yet their attitude towards him will be, as before, formal and ritualistic. The priest proudly directs the ritual. What changes, then, in so far as the space of the church is an organic extension of the congregation, is the relations between the members themselves. The priest then is no longer a solitary mediator detached from his people but consecrates the entire group as a symbolic vehicle of mediation. The group is pervasively " in Christ," not necessarily in a personal sense but a social sense. The personalistic group is transformed into a ritual community dedicated to " humanity." The remaining question is whether the priest can sustain this highly abstract climate until the instinctual group is lost sight of and dissolves forever. Usually what happens, if the outsider is not assimilated into the organic texture of the group, is that the congregation simply re-tribalizes and re-segregates itself in subtle and informal ways: the ritual and the tribal communities polarize, leading usually to the dissolution of the former.

Symbols and symbolic associations are arbitrary and alterable. The absolute for a man seems to be the concrete and inexorable fact of race, or what is the same, racial society. Tribal associations involve the whole emotional and instinctual man, while symbolic groups pertain simply to his abstract, objective intellect. If religion does not ultimately affirm the tribe, religion, and with it the priest, are irrelevant and even dangerous to life.

A crucial stage in the formation of a religious community is reached when the symbolic tie begins to channel organic energies. The group that has artificially set itself apart from others begins to feel *within* itself like an organic group. This naturally assumes that the tribal cleavages across which the symbolic bonds cut are not so deep that they can never grow together organically. Hence the Muslims granted certain cultural, linguistic, and even racial disparity, were, after all, all Arabs. The astute priest hence develops his symbol world with inbreeding in mind. Darlington stresses in this connection food taboos which in forcing a group to eat apart create the likelihood that it will breed apart. The Pythagoreans were a cult devoted to the worship of mathematical forms, but they were also forbidden to eat beans: this extra observance was not so trivial, since it would produce that intimate social cohesiveness of men and women who share a dinner table. Of course circumcision is an institution promoting a distinct breeding group. But also the whole moral code regulating sex, not only laws of inbreeding and outbreeding, but also of modesty (or what is the same, the conditions of flirtation and sexual signaling), would do the same thing.

An unexpected consequence of these religious observances,

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originally intended to mediate between individuals of diverse tribal groups, has sometimes been to create a special community or caste of outsiders, itself a priesthood *vis-à-vis* other groups and specially fit to mediate among them. This happened to the Jews.

The Christian priest is an outsider to tribal society* who ritualizes this society in order to mediate between it and the others. The priest or minister is a "transcendental" mediator. The Jewish rabbi is someone quite different. Though the rabbi is technically regarded as the counterpart of the pastor, his rôle is actually the opposite in relation to his own community. His purpose is to promote Jewish tribalism. He ritually defines his people and sets it off rigidly from others. Far from proselytizing, the rabbi instils a keen sense of Jewish nationhood which he re-enforces with a stern moral code regarding cleanliness, sexuality, and loyalty among Jews, anything, that is, that would promote inbreeding and racial separateness.

It is precisely the *lay* Jew, then, who is a "priest" *vis-à-vis* his host peoples. Having been roughly deported for ages from one territory to another, uprooted from concrete territorial affiliation, the Jew has learned to identify with his symbolic, transcendental, nationhood. He has evolved a trans-national consciousness which could only be a symbolic consciousness. It is not merely that the Jews are one nationality among others that they are set off: they are a special kind of nationality. They are a people of the sky, in other words of an abstract idea, rather than of the tribal ground.[13] The Jew is perpetually a guest and an outsider because his nationhood is ideal and "perfect": it stands as a perfectly abstract and symmetric edifice in a landscape of tribalism in which human beings as well as other life merge together in vague, blurred and approximate forms. This ritual perfection keeps the Jew, as Marx said, in the "pores and interstices of society."

It is precisely this outcaste status which renders him of value as a mediator. Being outside the tribal nations, he is also between them. The ritual status is reaffirmed when the mediating services

* I would be inclined to say he is now. But earlier he identified his spiritual functions with more of society and the state in the same way as does the rabbi now.—EDITOR.

[13] Indeed, the fundamental orientation of the Jew seems abstract. His accomplishments are especially prominent in abstract areas such as finance and science, while low in such concrete endeavors as painting. I doubt that this success—which anyway is a highly specialized success—has anything to do with innate intelligence but is, as I say, the consequence of the general strain on the Jew's abstract faculties, which must sustain his nationhood. He integrates himself into a world of objective, abstract things through the same means that he integrates himself into his abstract society. I am saying, in other words, that the grounds for Jewish "intelligence" are not biological but sociological.

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of the Jew are needed and castigated and damned when they are not. The Jew is invited in when he is needed as an economic or political mediator and driven out when his " contract " terminates. When the communication and material exchange between nations is facile, the Jew prospers. When this communication ceases, the Jew is not only ignored, he is positively made a scapegoat. It is particularly in situations where diverse groups must interact and articulate but have no historical or traditional mode of peaceably doing so, other than straight political intimidation, that the Jews are called in as arbiters.

This mediating rôle is the essence of so-called Jewish liberalism. The Jew is eternally conservative as a Jew but in order to make peace among outside factions he must agitate within them. Groups can be adjusted to one another only by to some extent disturbing them internally. Mediation explains the Jewish rôle not only in trade (and what is the same, money) but also in the communications media, the publishing houses, the universities, government social agencies, and the courts, to which they are irresistibly drawn by virtue of their deeply ingrained sense of caste mission. The Jews belong to humanity. In so far as America is a particularly hectic cross-section of humanity, they are especially involved here. The fact that Americans have for some time not been able to get along together on a deeply personal basis has meant simply that American civilization has inevitably and subtly become Jewish civilization. No one who is aware of our national literary and artistic culture could overlook this fact.

A particularly instructive case in point is Poland. In the thirteenth century Tartar invaders had burnt out Polish towns and with them the middle class of indigenous craftsmen and traders. Only a shabby, backward Slavic peasantry was left in the countryside. A handful of Teutonic knights moved in to set up an aristocracy. But culturally, linguistically, and even racially, they were far removed from the peasants, with whom they could scarcely communicate. The German nobility therefore resolved to build an artificial middle segment, a heterogeneous burgher class of craftsmen and tradespeople, to mediate between themselves and the Polish countryside. They invited in various national minorities, particularly the Dutch, French, English, and Jews. The Jews were the largest of these minorities. As an inbreeding caste with ability in trading and a history of straddling between disparate peoples, they were most successful as a surrogate span between the knights, peasants, and whatever other groups were living then in Poland. They even linked the peasants themselves as they traded among remote villages and markets. The Jews were the means to a new Polish national consciousness, although at first it was only a symbolic consciousness.

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However, German and Polish Christian elements and even the foreign gentiles adopted into the middle class, began slowly to grow together organically, to hybridize racially and culturally, within the original artificial framework. What were once discrete castes began to interpenetrate, maintaining some sense of class identity but not so discrete as before. Illegitimate offspring of caste crosses formed their own hybrid but legitimate lines, became a middle class and further incorporated elements of both castes. These castes in turn incorporated the middle hybrid class. In short, the Teutonic knights, gentile burghers, and peasants became the modern Polish people. What then happened to the Jews? As the Christian castes came together, the need for artificial, mediated relations between them ceased. The subtle, non-verbal, non-contractual, understanding that exists between men who historically and racially belong together, rendered mere symbolic and abstract ties, such as had been supplied by Jewish traders and arbiters, unnecessary. The Jews, as an inbreeding symbolic and ritual caste with ties extending beyond national territorial boundaries, were simply frozen out of Polish society. This happened despite their former service. It was left to them simply to mediate between Poland and other countries, an endeavor which led the Jews finally to import theoretical international Communism. This function again became irrelevant as Communism was incorporated into the organic life style of Poland. The Jews, for all their previous assistance in difficult times of transition, were simply packed with a few belongings and a few dollars in trains and deported. They left their fortunes and even their titles and academic degrees behind: they were again just Jews. They have been accepted only in Sweden, which itself has recently taken on the rôle of mediator in the modern world.

Jews and the function of mediation in general become irrelevant not only when disparate people instinctually grow together, but also when they irreconcilably grow apart. The Jews were the main mediators between the Spanish aristocracy and the Moors in Spain. The Spanish nobles had acquired a taste for the luxuries and the scientific ideas which came from the Moors. Hence while the peoples were fighting they were also communicating. But since they would not deign to have personal contact, the Jews were always moving between them. But the Territorial Imperative and the drive to found an organic Spanish Nation triumphed over the impersonal, metacultural relation. Also the Jews, then, who in the eyes of Spaniards were the representatives of Arabs, were expelled along with them. This expulsion and many like it, have re-enforced the ritual identity of the Jew and have established his status as an outsider and mediator in other host countries.

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America, a civilization of mediation and in this sense virtually "jewish," poses now the alarming possibilties both that America will unite in front of Jewry, closing it out, or will divide irreconcilably, letting it collapse in the schism that it cannot span. Various Christian nationalities — Anglo-Saxon, Polish, German, Irish, Italian and so forth—are evolving a subtle understanding, a unaniminity of instinct and nationhood deeper and more basic than a mediated (mediated through the mass media) "agreement." They are racially and culturally hybridizing across margins which had previously been transcended only through the symbolism or ideology of religious, academic, financial, and communications, establishments. These institutions have been secure only so long as personal relationships were insecure. Yet even the Protestant and Catholic sects which had united some Christians but divided others do not so rigidly determine breeding and cultural groups. It is perhaps possible at this time to foresee the diminished role of technological mediation, from television to jet airliners. Likewise outside mediators, the Jew among them, may not always be so culturally important. The Jew could be culturally dominant only in a nation where all men were outsiders.

On the other hand, the relationship which has always been most artificial and which now lacks even a solid economic and political basis, is increasingly insecure: this is the relationship between Whites and racial minorities. These groups have been accommodated, incidentally, according to a world view of reconciliation designed by the various white Christian minorities for the purpose of accommodating one another. The racial minorities, then, apparently in rejection not only of biological affiliation but also of symbolic unity with Whites, have begun to establish their own ritual communities.[14] This means absolute separatism. The American mediating establishment stands like a man with one foot in his boat, the other on the dock, as the boat drifts away. Since what is between cannot relevantly stretch itself indefinitely, it must fall into the margin which had been its very reason for existing.

In conclusion, then: A mediating agent is usually resented in so far as the relationship which must be mediated is, on an instinctual level, resented. The arbiter is identified with the distrusted opposing party, as it were as the abstract shadow of that party. This does not necessarily mean that the arbiter is summarily disbanded or extinguished. It means simply that he is again uprooted until he can find a gap or crevice wide enough to need him and narrow enough to accommodate him.

[14] Sammy Davis, Jr., when asked on a television talk show about his Jewish faith, said that his real religion was in fact his blackness.

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Race and Reality: The View from Demography

By ROBERT LENSKI

The most heretical intellectual position a person can embrace in the 1970s is that of regarding race as a human variable the significance of which derives from not only social origins but also biological ones. Anyone who adopts it as their own rapidly learns the penalties which are exacted for effrontery to the present day's politically-induced "sensitivities." The race heretic is condemned to bear many burdens, not the least of which is the necessary task of simple education and simple logical reasoning which, in our time, must precede nearly every serious conversation dealing with the potential implications of biological race for American society and for the world.[1]

An example of the task: following a strained denial of the reality of a socially significant race variable of other than social causation, he who denies will frequently offer a cautiously hedged compromise. It goes: "Suppose there really are significant innate psychological and behavioral differences between, say, Blacks and Whites. . . . Fine — but what are the 'goods' which can come from publicizing this fact? — and what are the 'bads'? " Naturally, he who denies face is acutely aware of the 'bads' which will come from such publicity, and volunteers his or her own version of them. Foremost among these: many Blacks will inevitably suffer some form of damage to their self-conception, especially to the degree to which they are in life-situations directly competitive with Whites. Furthermore: if belief in the social significance of innate racial differences again becomes widespread, particularly in élite circles, the spectre of Auschwitz again becomes real.

The former proposition is hard to challenge, and worthy of everyone's thoughtful consideration; the latter is clearly problematic. For if racially-linked differences in behavioral norms are indeed an important human variable, a sustained and forced

[1] THE MANKIND QUARTERLY serves the vital and almost unique function of allowing those who have largely accepted certain fundamental premises regarding the racial nature of man to *build* upon those premises, through mutual communication and, hopefully, criticism. Today, in nearly any other forum, so much time and energy is lost simply in refuting the most infantile criticisms pertaining to the issue that little energy is left for the task of developing and expounding upon basic premises. For example, what can one do with an audience half of whose members have already concluded (emotionally, not rationally) that the concept of "intelligence" represents little more than a ploy of old, white (and undoubtedly *repressed*) males?

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denial of them is likely, sooner or later, to lead to an uncontrollable social explosion. Human repression, in every form, ultimately breeds instability. In the long run, the only tenable approach to racial science, for all concerned, is no-holds-barred.

In essence, the racial egalitarian leaves the question: "What 'goods' could conceivably match these 'bads' in magnitude?" The egalitarians are confident there cannot be any, and it is important that the race heretic does not falter at this point for want of knowledge or insight. Because the "goods" may indeed vastly outweigh the "bads." This article seeks to explore just one of the potential benefits of a new, informed racial consciousness among the "advanced" peoples of the world. I consider the following argument to be far the best response which can be made to the above question at present. Future articles will deal with other important responses.

One tack to take in discussing the psycho-biological aspect of race is approximately this: "Frankly, I would not consider the race question a terribly urgent one, were it for one factor. Namely, the 'achievers' among the world's population are quite rapidly, at this moment, being 'phased out of existence' — in a largely *de facto* way — in all parts of the world. If the proportions of white to black of European to African, of Anglo-American to Latin-American, of Jew to Arab, of Northern Asiatic to Southern Asiatic, were on anything even *approaching* an even keel, clearly the question would lose most of its urgency. But they are not. Due to present social circumstances, both intentional and unintentional, in nearly all parts of the world, relative racial and ethnic populations are shifting wildly — and in a fashion adverse to human progress, however construed. No, the question of race in itself has little urgency — it is a question of only static significance. It is the world-wide problem of the *interaction of race and demography* which is now desperately urgent."

To know how urgent is to know the cold, discomforting facts. Here are a few:

1. According to the World Bank's projections on world population growth over the next 30 years, the number of children aged 6-11 years in Africa will rise from 52 million in 1970 to 100 million in 2000; the number of children of the same age in Europe will remain stationary at 35 million. (This is under an "assumption of fast-fertility decline" for both, which appears to be far more unlikely in the case of Africa. Under other assumptions, the gap will widen more impressively.)[2]

[2] K. C. Zachariah and Joseph E. Gholl, "Towards the Year 2000," *Finance and Development,* December 1973, p. 26.

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2. Only in the mid-1960s did Latin-America's population finally overtake Anglo-America's. Yet by the year 2000, only a quarter century hence, the ratio is virtually certain to reach 2 to 1, or higher. (Despite the fact that, by that time, Anglo-America's figure will be disguising the presence of many non-White Latins, in addition, of course, to Blacks.)[3]

3. In 1930, the United States had more people of Jewish than of Hispanic ancestry. Today, the latter group accounts for over *four times* as many new births as the former. By the beginning of the next century (only a few years away), unless action is taken, the birth ratio may exceed 10 to 1.[4]

4. One generation ago, peoples of Northern European ancestry and their overseas descendants comprised over 20 per cent of the global population. At present, they comprise about 12 per cent, with projections for a further decline to about 6 per cent in the next generation.[5]

The additional examples which might be provided are nearly without limit. The race heretic's ability to present his case may shortly become more dependent upon his skill in handling demographic, rather than psychometric or anatomic data.

Those who think of shifts in population *composition* as something which happens only gradually — and many leading demographers, as well as social scientists generally, are prone to this error[6] — are setting themselves up for a series of startling jolts

[3] K. C. Zachariah and Joseph E. Gholl, *op. cit.*, p. 23.

[4] Calculated by the author from U.S. Census data on national origins, and group fertility and immigration rates and projections; and from population estimates of Jewish publications.

[5] Calculated on the basis of global racial distributions, and continental and national population estimates and counts.

[6] See, for example, Richard L. Clinton and R. Kenneth Godwin in *Research in the Politics of Population*, p. 2: "Population changes are by their nature gradual, hence not easily identified as 'causing' other more obvious phenomena which themselves become defined as problems."

Although Clinton and Godwin deserve recognition for their path-breaking determination to inject the staid political science discipline with the population variable, they hinder their own purpose with statements like this. They need to be asked: "Gradual" as compared to *what*? Have, for example, the much-vaunted cultural changes of the recent past really been so rapid or profound? My favored response to the latter question follows.

It seems that adherents of the recently deceased "counter-culture" earnestly believed they were ushering in the millennium. It is, therefore, remarkable that the movement's "intellectual" spokesmen, from the rabble of Abbie Hoffman and Jerry Rubin to the heights (speaking only relatively) of Charles Reich (*The Greening of America*) and Theodore Roszak (*The Making of A Counter Culture: Where the Wasteland Ends*), were *almost uniformly Jewish*. On the other hand, the overwhelming

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in the near future. Most Americans still think, nostalgically perhaps, in terms of the traditional "10 per cent black minority group" in the American midst. Most still think of the old, once-dependable 9 to 1 ratio, and conclude: "If we cannot help this unfortunate little group in our midst, then something's wrong with us!" They do not realize that, given the black age structure and fertility — and choosing to ignore the Census Bureau's politically motivated practice of counting virtually all Puerto Rican mulattoes and Mexican mestizoes as simply "white" officially — the percentage of non-white babies being born in America *today* is rapidly approaching 25 per cent.[7] *These babies are the American future*: their ratio is not 9 to 1, but closer to 3 to 1. If the race heretic could somehow "know" that the trend would stop at 3 to 1 he might be assured. But to believe that it will, in the present American climate — social, political and intellectual — would be to play the fool. There is every reason to think that nothing can stop its continued, indefinite rise except for one very painful countermeasure: the deliberate recultivation of a realistic racial consciousness on the part of white Americans, precisely at a time when so many of them are hesitantly abandoning it.

A recent article in *U.S. News and World Report,* entitled "The Newest Americans: A Second 'Spanish Invasion,'"[8] provides a frightening glimpse of the proportions of the needed

majority of the would-be counter-culture's everyday members were Gentile. In other words, people who sincerely believed they were "turning the world upside down" (and I was among them) were, in large degree, merely sustaining human rôles established over centuries.

To take two extremes: Has hippiehood the same *meaning,* the same *content,* for the upper-middle-class Jewish hippie and the Southern (U.S.) working-class freak (even Alabama now has its share) — the latter of whom might be expected to casually flip through the Reich volume, monotonously intoning "Far out"? If it does, even remotely, why are not members of the latter group writing inspirational books about that meaning? (So much for the levelling dreams of one more generation's idealistic élite.)

I propose that if, for example, a group of working-class Gentiles is reproducing twice as fast as a neighboring group of upper-middle-class Jews, and if the young of both groups are suddenly becoming self-styled millennialists of some sort, then there is indeed *rapid* change occurring within the total population. But, despite Clinton and Godwin, and Reich, the change is fundamentally demographic in origin, not cultural.

[7] Calculated by combining data from the U.S. National Center for Health Statistics, *Vital Statistics of the United States,* annual (e.g., in 1969, 17.7 per cent of all U.S. live births were "Negro and other"), with U.S. Census data on national origins, and group fertility and immigration rates and projections.

[8] "The Newest Americans: A Second 'Spanish Invasion,'" *U.S. News and World Report,* 8th July 1974, pp. 34-36.

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perceptual change. Although the article cites forecasts that Spanish-Americans (primarily non-white) may become the nation's largest minority, surpassing even Blacks, within just 20 years, there is not a hint of anything being disagreeable or unfair in this. Although both the development of an explicit racial consciousness among Hispanic young people and the formation of *La Raza Unida* (literally, The United Race) are recounted, nowhere is it suggested that a counter-consciousness is the *inevitable,* or even a possible, response to this by Whites. Undoubtedly, the author could not conceive of any such future development, given the race guilt now so widely prevalent among educated white Americans. At the end of the article, a Chicano psychologist is quoted as saying: "Bear in mind that within the next 10 years, over 50 per cent of the population of California will be Spanish-speaking."[9] Now clearly, he exaggerates: this much will not happen this fast. Even so, two remarkable observations can be made: first, his projection is not refuted; second, as offered, it draws no alarmed response — in fact, no response at all beyond the implicit one of "Let it be, brother. Peace and love. Peace and love. Walk right over us." None of this would be surprising in the least, coming from most of the mass media. At this time, the only response available to white people, *as white people,* to any situation confronting them collectively is the guilt-ridden passive one. But the conservative *U.S. News* is not "typical" mass media: from its pages, at least a muted and prudently disguised objection might be anticipated. This might, for example, take the form of defending the interests of Blacks and other minorities, and the poor generally: it is certain that the tidal entry of additional backward elements can only retard their painful progress. No such objections are forthcoming.

A group which stands to lose as much as Blacks by the great Latin entry is the political liberals. *A cursory familiarity with race relations informs one that the entry of every non-white Latin into the United States* (or, for that matter, the excess birth of every Latin or black over a white in this country) *spells the defection of one white liberal to political and economic conservatism.* The comparative social records of such ethnically homogeneous countries as Sweden and Japan and such heterogeneous ones as the United States and South Africa should make every American liberal wary of the diminishing white presence.[10] It is easy to imagine some of these liberals, in their

[9] *Ibid.*, p. 36.

[10] A geographically-delineated heterogeneity, such as Switzerland's, produces the effect of homogeneity.

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boundless naïveté, justifying high minority fertility and non-white immigration through the rationalization: "Well, the Whites are just so conservative. You cannot get through their thick skulls. Let's *add some color* to America. That will get us social justice." And later: "The Whites are just getting more and more reactionary. Let us add another dash of pepper, quick." By their reluctance to concede the apparently universal connection between ethnic heterogeneity and conservatism, the liberals assure their own defeat.

Unfortunately, it will not just be a liberal defeat. It will be American society's defeat in a broader sense. The difference between a political system polarized along ethnic lines, and one loosely reflecting class lines, is the difference between South Africa and Australia, between Mississippi and Minnesota, between unremitting anxiety and peace of mind — *above all, between preoccupation with one great and intractable social problem and the opportunity to be concerned with others.*

Contrary to the "common wisdom" of the intellectuals, the chasm separating most peoples of African and European ancestry is perceived by those peoples themselves to be of much more profound social significance than are the intra-class differences within either group. Although the denial of this fact by those in élite life-situations has a long history, it has yet to be denied by any white group which has *experienced* it. Of course, a key element of the common wisdom for many years has been that those who dwell in ivory towers almost invariably know more about people's lives than do the people who are living them.

The racial heretic's soapbox warning[11] to America (and much of the advanced world) today might well be: "I have seen the future, and it . . . is South Africa!" Such a cry is susceptible to charges of sensationalism. Yet, when one considers the following phenomena: non-European nationalities in the USSR with birth rates more than triple those of their Soviet counterparts of European descent; southern Europeans invading northern Europe; Africans invading Europe generally; vast human movements from northeastern (black) Brazil into southern (white) Brazil; Arabs outbreeding Jews by three to one in Israel and the backward Oriental Jews far outbreeding the advanced Western Jews in the same country; backward Moslem Arabs outbreeding the more advanced Christian Arabs in Lebanon, and on and on and on. . . . Suddenly one comes to appreciate that the handful of advanced nations and regions this world has produced have apparently, quite unconsciously,

[11] This being nearly the only forum still open to him.

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selected South Africa, in all its inherent difficulties, as their social model. The mind rebels at the strain of this recognition, demanding: Why?

Why, when we already know so much about the hardships worked upon societies by excessive plurality do we encourage it, by default if not always deliberately? Why, when we have available no single recorded example of Blacks (for example) attaining a collective level of consciousness acceptable by white standards, do we — on ivory-induced faith alone — permit their sustained (indeed accelerated) entry into such new white cultural milieux as Britain, France and Canada? What is the rush? Why can we not wait a generation or two, for some modest *confirmation* of the faith, before *acting* upon it — often in irreversible ways?

Why is a white American populace with average I.Q.s (with all they seem to imply) of 100 not alarmed when it is struck broadside by a wave of Chicanos whose I.Q.s may average only 90 — not a lot more than the Blacks with whom it has had so much trouble coping? Why are these same Americans in no degree alarmed by the fact that a brilliant, uplifting élite group such as the Jews could, in the space of a generation, decline from 3.7 per cent to 2.7 per cent of the national population, with a further decline of 1.7 per cent projected over the next 50 years? — while at the same time a severely taxing Hispanic element could climb from 3 per cent to 6 per cent, with short-range projections of 10 per cent to 20 per cent bandied about? Why?[12]

There are three chief answers. First, there is the mass acceptance of a totally unsubstantiated belief in the unbridled efficacy of environmentally-induced change in people. Second, there is the parallel mass ignorance of the vast capacity for change found in such demographic processes as migration and differential fertility. Third, and most pernicious, there is the widespread acceptance of social science's wholly arbitrary and irrational predefinition of achievers as "exploiters" and non-achievers as "exploited" This last element has dealt a particularly crippling blow to the thought-processes of the idealistically-inclined among today's younger generation.

Put into practice, the first two types of ignorance mean that, shall we say, the "Friedmans" are called upon to educate and heal and uplift the "Garcias," even though the former group is declining, relative to the latter, at a rate several times greater

[12] Of one thing we may be certain. Were the demographic situations of these two groups simply reversed, the nation would be in an uproar over it — and the idealistic Jews would be in the vanguard.

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than the latter is "becoming like the former" (whatever that might mean). Obviously, in such a situation, all of society's best efforts are wasted — indeed, eventually lead to a growing *net loss. It all ends when the Friedmans abandon the Garcias to their own devices, and dedicate themselves to the task of saving their own cultural soul.*

Put into practice, the third variety of ignorance means that, for example, two million Frenchmen may no longer live in Algeria because they would "exploit" the majority group; but Algerians may invade France *en masse* because it is ludicrous (or worse) to suppose that their crime, their shantytowns, their exorbitant birth rates (constituting nothing less than "demographic imperialism"), or (conceivably) their genes might exploit the French. (A part of the problem is that the Algerians do not necessarily exploit *all* Frenchmen. Individual fortunes are made off their presence. They do, however, exploit the common French workingman).

These insidious factors — an irrational faith in the environmentalist creed, a failure to recognize the significance of demographic change, and an inadequate allocation of "blame" for social ills — lie directly at the root of the failure of the world's advanced peoples to halt the flow of deleterious cultures and/or genes which has been almost universal and unremittant over the past half-century. Until it is widely recognized that demographic change has the potential to outstrip cultural transmission, and is widely exercising that potential today — and until it is widely appreciated that *exploitation works in many ways,* and must be seen as bilaterally rather than unilaterally operative — there will be no alteration of the world's unfavorable one-way cultural and genetic flows.

These three cardinal fallacies of the modern social intellect — an unwarranted faith in environmentally-induced change; a parallel neglect of demographically-induced change; and a narrow and inadequate conception of social exploitation — acting together, permit the "pluralization" of the advanced world to continue in the complete absence of any *legitimated* consternation. The ease with which a demographic curve may overtake an environmental curve on the graph of social change goes totally unrecognized. The possibility of the former curve shooting right out past the "range of operation" of the latter curve is not seen as a threat.

Thus, for example, it is not seen that the United States is probably, at present, rapidly approaching the limits of its ability to assimilate its Hispanic population. A nation which has had nothing but heartbreak from its black/white cleavage is apparently about to add a third element to the equation — *before*

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resolving the first two. It is probable that if the great majority of Americans were made aware of the implications of its impending "decision," vigilantes would soon be patrolling the border with Mexico along the Rio Grande, and Puerto Rico would be cut adrift. The social scientists who might educate the majority to the nature of its options are, however, far too entangled in their own dogmatic theoretical webs to be of any assistance. Quite the contrary: the webs dictate that an obsessive concern with the entire matter is a certain indication of ignorance if not depravity. In this way the intellectual élite actively blinds the common man to his own best interest. It is not a new story.

The ethnic groups with histories of achievement are a fast-declining presence in the world. They have a right to be concerned about this, *the same as the non-achievers would have a right to be concerned about their own decline.* The numerical decline of the achievers is largely the predictable consequence of the varying stages of national development of the world's nations. The achievers live in the developed nations, characterized by low birth rates and low death rates; the non-achievers live in the "developing" nations, characterized by high birth rates and low death rates (that is, by "population explosion"). There is no point in anyone getting overwrought by this, since nothing can immediately be done about it. The achieving groups are fated by history to undergo a period of steep relative numerical decline, and they are presently enduring this fate.

Unfortunately, some people are never content to "leave bad enough alone." They are determined to make an uncomfortable, in fact an outright dangerous, international demographic situation much worse. It would stand to reason, with country A or group A's population stable, and country B or group B's population exploding, that, as a minimal stabilizing measure, the latter population could be "quarantined" to a reasonable degree. This, however, the race egalitarians cannot permit. The inherent logic of their ideology dictates that any such arguments are irrational, *given the assumed mental and behavioral interchangeability of all the world's peoples.* For this reason, the race idealist finally necessitates the intervention of the race heretic. The inner dynamic of the former's ideology, if sincerely held, compels him to push onward to the (usually) prudently unarticulated final goal of racial panmixia — regardless of the cruel hardships this may work upon certain groups (the achievers), or even the world.

Thus, for example: Interracial adoption becomes a mass phenomenon in North America. Truckloads of illegitimate black babies are shipped from Chicago to Minnesota, where they are foisted upon unsuspecting infertile white parents who can obtain

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no other infants — for the ironical reason that they live among a population group too socially advanced to produce a surfeit of unwanted children. (In the city of Minneapolis, in 1970 alone, the adoption unit of Lutheran Social Service — not the only such agency in town — placed 119 black children, overwhelmingly in white homes.[13] The total black population of Minnesota as recently as 1940 was under 10,000. This is how we in America "solve problems.")[14]

As early as 1969, a study of 240 American adoption agencies revealed that, for every 100 white children available, there were 116 white couples; for every 100 non-Whites available, there were only 39 applications from non-white couples.[15] This was before the U.S. Supreme Court's 1973 pro-abortion ruling which has had the impact of reducing the non-white surplus somewhat, but greatly increased the white infant shortage. The inevitable result is greater and greater pressures on white couples to adopt non-white children. In fact, some adoption agencies will no longer accept applications from white couples who will not consider adopting a non-white child![16] Certainly, the denial to Whites of "freedom of association" on such intimate a level is racist tyranny. Perhaps some unhappy martyrs will be level-

[13] David C. Anderson, *Children of Special Value: Interracial Adoption in America,* St Martin's Press, New York, 1971, p. 3.

[14] I uncovered another example of the same situation by examining five randomly selected editions of the alumni magazine of a very liberal, élite college in the northern United States. In the back pages, among the alumni news, were occasional pictures of graduates' families. Among alumni from the class of 1960 to the present, a total of 37 children of white graduates were pictured, of whom eight (or some 21 per cent) were non-white. Among four children of non-white graduates, all were, of course, non-white.

The significance of all this lies partly in the fact that the people who graduate from élite schools, such as this one, have been shown repeatedly, and almost invariably, in surveys dating back to the Harvard of the 1870s, only to approximately biologically reproduce themselves (at best). Now, as if the continuance of such an unhappy tradition was not sufficient in itself, the élite has casually (even unconsciously) taken the more radical step of collectively transforming their own racial identity — the legacy of hundreds of thousands of years of evolution.

Take a look at the parents and children the next time you are in a food store around Berkelev, California, or Ann Arbor, Michigan, or Cambridge, Massachusetts. Theirs is the profound radicalism which hurls *its very being* into the great unknown, on the advice of a few influential academic gurus.

[15] David C. Anderson, *op. cit.*

[16] David C. Anderson, *op. cit.*

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headed enough to argue the case up to the Supreme Court.[17]

Sadly, the shortage of adoptable white babies is fast becoming a major international phenomenon. The liberalization of abortion laws has played a part in this, as has the trend for unmarried mothers to keep their babies. The Zero Population Growth advocates have also worked an influence. Many parents who want to have large families have been convinced that bearing more than two children is always wrong: the only way out for them is adoption. (The supreme irony, of course, is that the type of person who gets concerned about the world environment, and opts for adoption, is likely to be the type of person whose ancestors have only barely biologically perpetuated themselves over the past few generations. The population crunch may be decidedly not of his or his family's making).

The upshot of the white baby shortage is likely to be the development of a "baby-import business" which would bring babies into the white countries from the surrounding non-white ones. Mexico and the West Indies would be logical sources for the United States and Canada. In the present intellectual climate, the growth of such a trade would certainly meet with scant resistance.

It is worth noting that the greatest threats to the racial identity of achieving populations seem often to come from unexpected sources. Thus, for example, while the American race heretics are busy fretting about the fertility edge Blacks have over Whites, they neglect a non-white tidal wave sweeping over the Mexican border. Or, while they worry about miscegenation between back and white, they neglect the possibility of widespread adoption of black infants by Whites. Even in the "liberated" 1970s, black-white miscegenation is a remarkably small-scale phenomenon in the United States. However, interracial adoption may very well represent "miscegenation at a generation's remove." It is not difficult to understand why.

Traditionally, black-white cultural barriers have acted as a restraining influence on black-white genetic interaction. With

[17] Former American basebell star Jim Bouton would take this outrage much further. In his foreword to Paul J. Gillette's successful book, *The Vasectomy Information Manual,* Outerbridge and Lazarde, New York, 1972, Bouton recommends (p. 21), in the words of Nathaniel Weyl, "that parents be denied Federal income tax exemptions for their natural children and that they be taxed one-tenth their income for each third and subsequent child. However, they would be given a tax deduction of $2000 per annum for every adopted child and $4000 per annum if the adopted child is non-white." From "Population Control and the Anti-eugenic Ideology," by Nathaniel Weyl, THE MANKIND QUARTERLY, Vol. XIV, No. 2, October-December 1973, pp. 63-82. Needless to say, Bouton's proposals raised no public outcry.

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inter-racial adoption, these barriers are removed in the most radical manner conceivable. With whom is the black boy growing up in a white Minneapolis neighborhood if not the Scandinavian "girl-next-door"? The cultural barrier is obliterated but, as the race heretic points out, the biological one remains. On the basis of a vast amount of scientific data, it seems nearly certain that the massive infusion of black genes into a white population can only harm the potential of that population to achieve and retain the kind of life which white people, at least, generally seem to cherish.[18] But a *delayed resistance* to such an infusion, since it must take place in an intra-cultural context, indeed frequently *on the plane of personal relations,* becomes far more difficult — far more painful — than one across marked cultural lines.

If Mississippi ever does "come to Minnesota," the result will be an agony such as Mississippi itself never knew: in fact, so frightening is the vision that there is good reason to suppose it will never happen. Certainly, boat-rocking on this magnitude will be resisted by most people for as long as possible — some will fight its general acceptance to their dying breath. Our blindness to race today, says the race heretic, may lead us tomorrow to a tragic choice between a much duller America and the revival

[18] The reader is reminded of Sir Julian Huxley's oft-cited calculation that, by mixing two subpopulations, one constituting 89 per cent of the total and with an average I.Q. of 100, the other 11 per cent with an average I.Q. of 85, a new population will be produced with an average I.Q. of 98.46 — a decline of merely $1\frac{1}{2}$ per cent in average intelligence; but that, a decline of 50 per cent in the number of people with I.Q.s of 160 and over, will also result. From "Eugenics in Evolutionary Perspective," *Perspectives in Biology and Medicine,* Winter 1963, pp. 165-66. Huxley's selection of the figures 89 per cent and 11 per cent, following the 1960 Census, was in pointed reference to the United States.

Unfortunately, they are now outdated. Perhaps some latter-day Huxley will now make a similar calculation on the basis of such percentages as these: I.Q. 85 ($16\frac{1}{2}$ per cent), I.Q. 90 or 95 (8 per cent), I.Q. 100 (75 per cent). Such a calculation, which would probably project about a 50 per cent drop in I.Q.s above 135-140, and about 75 per cent in those exceeding 160 (in the case of panmixia), would reflect the new reality of America's maternity wards.

Immediate racial panmixia in South Africa (with a population presently some 17 per cent white, 8 per cent Coloured, the rest largely black) would result in a final product approximating the Afro-American population of the United States. However, given the vast fertility differentials between the nation's white and non-white populations, gradual panmixia would result in a much darker product.

"Whenever such observations as these are made today, there is liable to be a background snickering from scientists who feel that the advance of "genetic engineering" — making it possible for people to choose their child's race, eye color, etc. — will soon render them obsolete. However, there seems to be little indication that non-Whites, on their part, are sufficiently lacking in self-pride to care to select from "foreign models."

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of a racism *unhappier* than any the world has experienced before.

The heretic's vision is also a very private one. Indications of this surround him. A classic example occurred in the recent Woody Allen comedy *Sleeper* (an excellent film, which never would have existed without a certain 2.7 per cent of the American populace). Here the protagonist, a practitioner of cryogenics, suddenly finds himself unfrozen — his disease cured — in the mid-twenty-first century. The world in which he awakes is unlikely in a great many ways: herein lies the humor of the film. One most unlikely feature is, however, probably unintended: this is the presence of a small population which is both uniformly advanced and inter-racial, but seemingly *unmixed*. The non-Whites are doctors and engineers all right, but they generally look like black Africans and full-blooded Orientals. There is complete integration among complete equals — but where are the racial hybrids? Presumably, if Woody Allen had been unfrozen just one generation later he would have discovered a population happily engaged in panmixia. So much for the racial insights of a nation of racial sleepers.

The longer America, and other parts of the advanced world, takes in reaching their racial awakening, the more painful that awakening may be. Were the awakening somehow to occur today, the pain would be only fractional compared to what it would be one generation hence. The pain, if and when it comes, will occur on several levels. First, for the white American population, newly aware of its collective identity, there will be the pain of realizing that it has declined in numerical status from a pervasive national element at 90 per cent to something much less, perhaps 60 per cent. The race egalitarians, in their stubborn refusal to concede the common humanity of the race heretic,[19] deny that the latter will feel pain on other levels as well — but on these levels it will be shared by nearly all of us. There will be the pain which comes with a society where, by necessity, stereotyping is widely substituted for the open approach to the human individual. There will be the pain which accompanies a political system rigidly fixed along group lines, largely devoid of the give-and-take which has previously distinguished non-Southern politics in America. Especially, there will be the *intense pain of new awareness and new confrontation in the most intimate human relationships,* among family and friends.

[19] Indeed, a concerted effort is under way at present to deny us the respect we do not withhold from others. For example, we are told that people with views like those presented here are, *ipso facto,* mentally ill. It is deemed irrelevant that these views are generated in a wholly rational fashion, unaccompanied by animus toward any part of the human race — rather, by contrast, with a genuine feeling of warmth toward all humanity.

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There is good reason to believe that this last pain, and its avoidance, will come to *determine* the future course of ethnic relations in America and in much of the world.

Long after the pain of white decline, the pain of stereotyping as the *pervasive* American way of life, and the pain of political polarization and stagnation have reached epic proportions, the avoidance of the much greater personal pain will continue to hold back any racial awakening. It is entirely possible that the majority of Americans — acting in a primarily subconscious manner, for reasons of personal "defense" — will "choose" never to have such an awakening. Such a determination to sleep on will bring increasingly shrill cries from an awakened minority which stands to lose relatively little from the more personal pains, but just as much from an ongoing national decline. This minority, which will not be small, will never be willingly silenced. Therefore, it may finally become necessary to "sacrifice" the truth-sayers for the sake of preserving the social apple-cart. The majority will choose a protracted descent into darkness (into nothingness from the perspective of scientific truth) over a sudden confrontation with great pain. From this decline, beyond a certain point, there can be no retreat.

All of this has brought us a great distance from our opening consideration of the "goods" and "bads" which can come from the publicizing of racial differences. In light of the tragic vision of the race heretic, the charge by he who denies race that such publicity wounds a portion of the black person's self-esteem — for all its validity — shrivels into near-nothingness. For that vision proclaims that the only final outcome of a failing of white racial consciousness can be one of two things: the virtual obliteration of the white race, or what is almost as bad, the reduction of the race to a position effectively *subservient* to the needs and whims of a much less capable non-white population. We already see this increasingly in some parts of the world.

None of this would be the case except in a shrinking world in which interracial contacts grow constantly. It would be true, but of less importance, in a shrunken world in which Whites were more numerous, and so at least had a greater chance of leaving some discernible genotypic imprint on the final products of panmixia. It would be true, but less unjust, in a shrunken world in which the national populations most *exposed* to panmixia were not generally the white ones — and the greatest, unendangered racial reservoirs generally in places like China and Central Africa.

Incredibly, many of those most vehemently opposed to the recultivation of a realistic and moderate white racial conscious-

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ness are fully aware that its absence spells the end of either the white race or most of its independence. Even more incredibly, many of those favoring the abolition of the white race (or its independence) are among the strongest opponents of unbiased racial studies. In other words, they are determined not to learn what it is they are abolishing. The phenomenon of white racial suicide is certainly one of the great social wonders of the twentieth century. No excess of the Nazi era, either in thought or deed, surpasses those we see around us today.[20] For mass murder would *seem* to be much closer to the human historical norm than collective suicide. But is it? This question may be answered for us in years immediately ahead. Radical white self-hatred bears our closest scrutiny. It may provide that answer.

[20] This is written by one whose adolescent world-view was more profoundly shaped by an awareness of the awful reality and meaning of Auschwitz than by any other even in human history.

OUR CONTRIBUTORS

T. KOERTVELYESSY
Ohio University, Department of Sociology and Anthropolgy, Carnegie Hall, Athens, Ohio 45701, U.S.A.

AZZO GHIDINELLI and ROSALBA TERRANOVA
Department of American Studies, Institute for Transcultural Studies. Piazza del Carmine 4, 20121 Milan, Italy.

RICHARD G. SWARTZBAUGH
University of Mississippi, College of Liberal Arts, University, Mississippi 38677, U.S.A.

ROBERT LENSKI
504 2nd Street, Apt. 3, Washington D.C. 2003, U.S.A.

PETER BOEV
The Anthropological Institute, University of Sofia, Sofia, Bulgaria.

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Anthropological Data on the Ethnogenesis of the Ancient Thracians

By PETER BOEV*

An anthropological contribution to the problem of the origin of the Ancient Thracians must begin with the investigation of the anthropological types of the pre-Thracian and of the Thracian populations. In this way it can be determined, if the anthropological racial types, which are characteristic of the Thracians, are of autochthonous origin and closely related to the pre-Thracian population or of migrants from other regions.

In the Neolithic period (B.C. 6000-5000) the population of Bulgaria was Europid and had more or less strongly pronounced Cro-Magnoid traits. Crania dating back to B.C. 6000 have been excavated from Karanovo, Bulgaria, by Mikov and Georgiev. Even at this early time gracilization can be recognised in the crania. This is probably associated with the far-reaching changes in mode of life following the adoption of agriculture, and the consequent change in nutrition. The gracilization process had thus begun in the Neolithic period, and continued into the Eneolithic. At this time — B.C. 4000 — we find very gracile Mediterraneans from the settlement mound at Russe, which has been excavated by Georgiev and Angelov.

At the end of the Eneolithic period brachycranial Europids appear. Some of these are gracile, while others show more primitive traits. Thus, in the settlement mound at Russe, individuals were also found with primitive anthropological traits, such as, for example, the Oberkassel type exhibits. Furthermore, cranial types were found which anthropologically are largely the same as those from the Gumelnitza and Boian Culture in Wallachia, Rumania and crania from the Bendceramic Culture in Germany.

In addition to a few Alpine racial types, Dinaric individuals appear in the midst of the Mediterraneans. From the Neolithic period up to the end of the Bronze Age this Dinaricization intensifies. Anthropologists from the Balkan countries — Professors Necrasov, Poulianos, and Boev — are of the opinion that brachycephalization, and consequently also Dinaricization, are of autochthonous origin. This view is supported by all the Neolithic-Eneolithic anthropological material from Bulgaria. The specific stage of Dinaricization can be followed chronologically up to the appearance of the Dinaric race type in the Eneolithic Period and the Bronze Age. The author is of the opinion that

* "Anthropologische Angaben über die Ethnogenese der Thraker." *Homo*, Vol. XXI, No. 2, 1970, pp. 94-97. Translated by Donald A. Swan.

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Dinaricization represents the result of a mutation process within the Mediterranean race.

The earliest Thracian skulls originate from the fifteenth-fourteenth centuries B.C. They were uncovered by B. Nikolov at Tarnawa in the Wratza region. The site consisted of a Thracian burial-mound ("Glavtschowa mogila"), in which two burial-chambers made of stone were found. Nine burials have been discovered, with two of the dead burned. Only three of the crania are adult. The rest are of children. The crania show Dinaric-Mediterranean racial traits.

Four settlement mounds dating from the eighth-seventh centuries B.C. have been excavated at Dolno Sachrane in the Kasanlak region by L. Getov. The mounds are in the vicinity of the Thracian city of Sevtopolis. While the first settlement mound showed a cremation burial, the remainder contained three interments of bodies. Twelve crania were found at this site, of which one was that of a child. The crania exhibit Cro-Magnoid, Gracile-Mediterranean and Dinaroid traits.

An additional ten Thracian crania were found in Thracian burial-mounds dating from the fifth-third centuries B.C. and the first-fourth centuries A.D. More or less gracilized Mediterraneans as well as Dinaroids were represented among the crania.

Anthropometric data on the Thracian crania are presented in Table 1. The data include 12 direct measurements and nine calculated indices. A male skull excavated from Kaloyanowo and dating from the fourth century B.C. is shown in Figure 1. This skull is of Dinaro-Mediterranean racial type.

The anthropological investigations of the Thracian cranial and skeletal remains can be supplemented by the following information: historical reports about the physical appearance of the Ancient Thracians; Thracian grave-masks; portraits of Thracians on coins; sculptured figures of Thracians on the Thracian tomb at Kasanlak; dress and ornamentation, which provide an idea of the bodily dimensions.

Xenophon, Aristotle, Calenus, Ovid, Julius Firmicus Maternus and other classical writers provide information about the physical type of the Ancient Thracians. They describe the Thracians as stately men, as blond — even reddish-blond — with blue eyes, and with white, delicate, hairless skin.

It can be assumed that the Thracian grave-masks, like all masks from the Roman times, were manufactured according to traditional models and do not represent actual portraits.

A more certain representation of an Ancient Thracian is provided by the coin portrait of King Seut III, who ruled from B.C. 323 to 311 (Figure 2). The portrait represents an Armenoid racial type.

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Figure 1: Adult male skull of Dinaro-Mediterranean racial type from Kaloyanowo, Bulgaria (Fourth century B.C.).

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TABLE 1

Anthropological data on Thracian crania from Bulgaria

Martin Number	*Anthropological Measurements (in m.m.)*	*Tarnawa* 15*th century* B.C. *Male*	*Female*	*Novae* 10*th century* B.C. *Male*	*Nowa Zagora Kaloyanowo* 4*th century* B.C. *Male*	*Female*	*Ulpia Oescus* 3*rd century* A.D. *Male*	*Gradenitza, Sofia* 4*th century* A.D. *Male*	*Female*
1	Greatest cranial length	207	181	209	187.5	190	180	188	184
8	Greatest cranial width	144	145	133	144	143	136	140	141
9	Smallest brow width	—	—	—	140	130	128	137	—
17	Ear-bregma height	—	—	86	125	110	111	115	—
20	Basion-bregma height	92	97	92	97.5	96	97	100	97
45	Zygomatic arch width	130	—	125	128	128	—	131	—
48	Upper facial height	79	59	82	75	68	74	66	65
51	Orbital width	—	38	44	42.5	41	43	41	41
52	Orbital height	41	34	34	33.1	32	37	33	31
54	Nasion width	21	—	25	26.5	23	27	27	25
55	Nasion height	58	—	59	58	52	54.2	52	45
66	Angular width of lower jaw	93	78	102	98	101	—	107	—
	Anthropological Indices								
8:1	Length-breadth index	69.6	80.1	63.6	76.8	75.3	75.8	74.5	76.6
17:1	Length-heigth index	—	—	—	74.7	68.4	71.1	72.9	—
17:8	Breadth-height index	—	—	—	97.2	90.9	94.1	97.9	—
9:8	Transvers. fronto-parietal index	63.9	66.9	69.2	67.7	67.1	71.3	71.4	68.8
45:8	Transvers. cranio-facial index	90.3	—	94	88.9	89.5	—	93.6	—
48:45	Upper facial index	60.8	—	65.6	57.8	51.6	—	50.4	—
54:55	Nasal index	36.2	—	42.4	45.7	44.2	49.9	51.9	55.6
52:51	Orbital index	—	89.5	77.3	77.8	78.1	86.4	80.5	75.6
66:45	Jugo-mandibular jaw	71.5	—	81.6	76.6	78.9	—	81.6	—

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Figure 2: Coin portrait of the Thracian King Seut III (Third century B.C.). Hither Asiatic racial type.

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The sculptured human figures on the Thracian tomb at Kasanlak show — as little individualized as the facial features are — at least a typological representation, which the artist could have formed from the Thracians in the vicinity. The man is represented as Atlanto-Mediterranean in racial type, the woman as Dinaric in racial type.

The costume which has been preserved proves that the Ancient Thracians were smaller than the Bulgarians of today. This appears to contradict the authors of classical antiquity. However, Dr Iw. Venedikov has demonstrated that Thracian rings will not pass over the fingers of the men of today.

The apparent contradiction between the ancient authors, who described the Thracians as blond, and the Dinaric-Mediterranean cranial and skeletal material uncovered from Thracian sites can be explained in the following manner. In the Eneolithic Period at the beginning of the Bronze Age, Thrace was inhabited by people of the Mediterranean race, who were probably brunet in pigmentation. As is known from history, migrations of tribes from the Balkan peninsula to Anatolia occurred at this time (Lycians, Phrygians, *et al.*). Probably at that time blond peoples from the North invaded the Balkans and mixed with the indigenous population. Out of this population arose the Ancient Thracians. Presumably, this blond element was especially noticeable to the classical authors in their description of the Thracians. The basic population, however, remained Mediterranean-Dinaric in race. Consequently, the Thracians are basically of autochthonous origin, which does not exclude some admixture.

In summary, cranial and skeletal remains of the Ancient Thracians, uncovered from what is now modern Bulgaria, are predominantly of Mediterranean race with some Dinaric admixture. They thus resemble in essentials the pre-Thracian population from the same region. Some immigration from the North must be assumed, however, since ancient authors often described the Thracians as blond.

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Book Reviews

THE MIND OF MAN IN AFRICA

By J. C. Carothers. Tom Stacey, London, 1972. Pp. 192. Price £2.50.

Since his pioneer work *The African Mind in Health and Disease, a Study in Ethnopsychiatry* (1953) has long been out of print and scarce, Dr Carothers's present book is particularly welcome. One would search here in vain for any sign of racialism or illiberalism since the book was written by a medical doctor and psychologist who cared for his patients and studied them with affection. Herein lies the value of the author's balanced treatment of the African in the New World and in the African environment and of the physical and mental ailments which beset him.

His study of the environmental factors of the sub-Saharan African and of their probable genetic consequences is important. He outlines how man's mind developed in the original forests of that Continent—in a world of sound, which was essential for survival. In Europe's more open and varied terrain the visual world became more important. The nature-nurture issue is approached with extreme caution and alternate views are recorded; but as the more detailed descriptions are given of the morphology and electrophysiology of the brain, and of the psychology and psychiatry of the African and the American Negro, the reader is well equipped to share with the author the synthesis of the evidence, called here " Perspectives ".

Some of the syndromes described appear to be an expression of a subconscious antagonism to the written word and all it stands for by a society in transition from an " ear " to an " eye " culture. Another startling difference is that bewitchment often takes the place in African life that conscience does in other cultures.

Most non-literate groups insist on the observance of meticulous social rules and stamp effectively on independent thought and personal initiative. (Even in the Europe of today their relics are not hard to find.) But the author concludes that, apart from a temperament which may well be substanially different, there remain four phenomena which are hardly to be explained on purely environmental lines: (1) The failure of the written word to spread in Africa till lately; (2) The distinctive psycho-motor and EEG development of the African infant; (3) The relatively poor achievement of American Negroes in psychological tests (particularly in logical analysis, abstract reasoning, and spatial conceptualization); and (4) The relative difficulty in dealing with three-dimensional problems experienced by Africans.

One is therefore finally impelled to ask whether an " ear " culture has lasted for so long in Africa that an " ear psychology " has become ingrained in the mental constitution of its peoples. The advantage does not lie wholly with the European as Carothers is careful to explain for an " eye " culture also has its hazards, but for the future happiness of Africans this book could prove useful, for one is left asking the question how an " car " culture could be developed in its own right and how such a developed " ear " culture could best survive alongside an " eye " culture with difficulties of its own.

ROBERT H. S. ROBERTSON

MAN AND THE EARTH

By Patrick Duncan, with a Message from Peter Scott. Volturna Press, Peterhead, 1974. Pp. 232. Price £1.90.

Patrick Duncan, who struggled against mortal illness to finish this book, has left a literary monument which should not be passed by without heed.

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He has reviewed critically man's position and rôle in the world and proposed a new ethic which has at its base this axiom—that the world and the biosphere are the supreme value on which the whole system is founded and that man's importance comes second. He holds that a cause of so much suffering and destruction is man's supremacy and domination over nature and that neither the Christian nor humanist ethics fully take into account the essential cruelty which has grown with his knowledge until he became the greatest predator and destroyer in the world.

Much of the book may be regarded as a valuable guide to man's follies in causing, for example, soil loss through deforestation, in upsetting the balance of nature by the introduction of exotic species of plants and animals, or in allowing far too many people to live beyond the means of sustaining them—a horrid warning of worse to come. He asks what benefits a doubling of the present population would bring and regards the present numbers as having already passed the optimum. Reduction he urges must be faced.

He maintains that the four great revolutions of civilisation of man are the introduction of weapons, agriculture, the state and the scientific method. He bitterly blames the Europeans for most of the mess, but believes that a new harmony or symbiosis with the environment is possible. The new cult would not deny the existence of God or be inconsistent with any religion or with Marxism. The geism he recommends as an interim ethical solution would eschew all forms of selfish imperialism but could embrace *the better attitudes of local or regional patriotism.*

Patrick Duncan's loyalty to Africa was well known and so was his hatred of racial prejudice, yet he does not fall into the trap of presuming equality among man. He loved the richness and variety of the forms of life and rightly states that some of the intelligence exhibited by animals is acquired by cultural transfer and some of it is inherited genetically.

ROBERT H. S. ROBERTSON

FRANCIS GALTON

By D. W. Forrest. Paul Elek, London. Pp. 340. Price £5.50.

Professor Forrest has produced a biography of Francis Galton that is both scholarly and readable. Galton's mother was Violetta Darwin, one of the daughters of Erasmus, so that Galton was a member of the Darwin clan, perhaps the foremost of Britain's intellectual families. Francis showed his remarkable intelligence from a very early age, particularly from a letter written at the age of four to his elder sister Adele, in which he gives an account of his abilities in arithmetic, reading, Latin and French. On the basis of this letter Lewis Terman estimated that Francis Galton had an I.Q. of 200, but Professor Forrest shows that this was based on a misreading of Galton's age at the time, and that the correct I.Q. is around 160.

Although Galton made numerous contributions to a variety of scientific subjects, his major interest from his forties onwards was in intelligence. Professor Forrest charts the development of Galton's ideas. First, his research which led him to the view that intelligence is largely hereditary and unitary; his statistical work on the normal distribution and regression; his theories on the relatively high average intelligence level of the lowland Scots and the low average of the Negroes and the Australian Aborigines; and finally, his interest in improving the genetic quality of the population through a policy of eugenics. Galton's forthright views on these subjects makes refreshing reading today, and Professor Forrest has rendered a valuable service in restating them in this excellent biography.

RICHARD LYNN

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ZAMBIA—I CHANGED MY MIND

By Michael Wright. Johnson Publications Ltd., London, 1972. Pp. 172. Price £2.00.

The author was a lecturer at the Evelyn Hone College of Further Education at Lusaka, where he lectured on constitutional law. On arrival in Zambia he had so-called "liberal" points of view. The book is a description of his life in Zambia. The book is an account of his feelings and experience concerning living under the emergency powers which the Government of Zambia imposed, which virtually destroyed the constitution upon which he had to lecture. The book describes the Lumpa Sect, and its extirpation by the Government, he is critical of the attitude of the Anglican Church, and deplores the manner in which the judges have been harassed. He deals also with Chinese penetration by way of the building of the Tan-Zam Railway from Dar-es-Salaam in the north.

In summing up his position in the light of his experience he says (p. 159):

> As I began to doubt the success of African Nationalism in Zambia, and noticed how British Africa is preserved, in so far as it is preserved, by British-trained troops, and that the very leaders, like Nyerere, had to be put back on their tottering pedestals by British arms, I pondered on the strange self-destructive frenzy of the British. A self-destructive urge was certainly what I saw, as Britain in the sixties supplied technical, financial and military assistance to Zambia, while Zambia laboured to switch its imports and contacts away from Britain as far as possible, tightened its control on trade, prepared to take over British assets and invited the Chinese in.
>
> So I finally changed my mind and left the Fabian, "liberal" soft-centre of British politics and its dangerous Left-wing allies. For it must now be apparent that British policies have been based on illusions, apparent to anyone who cares to look at the matter in an unbiased way.

It is obvious that the book has political conclusions, but even so, it is only by realising what is the current situation in any country that we can fully appreciate essential traits in the ethnological formation of a people. The present arises from the past.

A PIMA PAST

By Anna Moore Shaw. University of Arizona Press, Tucson, Arizona. Pp. 263, 31 illustrations. Price $3.95 (paperback).

This is an account of the Pima Indians by one herself. Although converted in her father's time to Presbyterianism, they remained, as a family, stoically attached to the Piman traditions.

The photographic illustrations show that many of these people are partly Caucasoid. Dr Carlos Montezuma is an outstanding example, by features and texture of hair (opposite, p. 158). Therefore, when the authoress speculates about being a lost tribe of Israel and related to the people of Crete, it is not so silly as it sounds. There is a blood link between the Mediterranean and Arizona.

Incidentally, the Pima said when a person died that he or she had departed for this hereafter. Also the pets and horse, and other possessions departed this life with them. The spirit lived several days round the house, and then departed for "Where morning begins in the East."

The authoress returns to the reservation after long years in the cities. She says: "Our reservation life is varied, rich, and rewarding. Each morning Ross (her husband) can be found cleaning the yard, trimming the

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trees, mowing the lawn, or working in his garden. What a joy it is for him to pick the yellow grapefruit and juicy oranges for our table and our friends! Our yellow vines are extra heavy bearers, and there are always apricots to give away" (p. 228).

This is an outstanding work on the aspirations of the native Red Indians today.

DRAMAS, FIELDS, AND METAPHORS: SYMBOLIC ACTION IN HUMAN SOCIETY. By Victor Turner. Cornell University Press, London, June 1974. Pp. 309, 4 maps, 2 charts. Price £8.25.

Unusually, this book draws its examples not only from primitive people but from facts of history. Thus the writer draws upon the Beckett and Henry II of England affairs as lending itself to the treatment of the social drama effect which Turner has advocated elsewhere (p. 61).

Professor Turner says: "Paul Alonzo Brown (1930-9) has asserted that there are 'three Beckets: The Becket of History, the Becket of Legend, and the Becket of Literature,' which can be readily isolated though they overlap. I will argue that these three are interrelated in a symbolic field which contains a set of paradigms or models for behavior drawn from the Christian religious tradition. . . . Since I am a social anthropologist with a long-term bias toward the analysis of microevents I shall use the social dramatic framework that I developed first in the study of small-scale central African village societies and have later begun to apply to the local feuds of medieval Iceland" (p. 63). This chapter, and much else in the work is worth reading.

The author is the professor of anthropology and social thought in the University of Chicago.

RACE AND NATIONHOOD: THE MENACE OF MULTIRACIALISM

H. B. Isherwood. Racial Preservation Society, Tonbridge, 1972. Pp. 31. Price 20p.

This small brochure deals with this subject under the following headings: "False Multiracial Propaganda"; "Misconceived Racial Legislation"; "Racial Characteristics are Inherited"; "Racial Differences, Deficiencies, and Disease"; "Races Have Pre-human Beginnings"; "Mankind's Racial Patchwork, The Caucasoids, The Mongoloids, Negroids, Ameroids, and Australoids"; and "Race Migration and National Survival."

In dealing with disease (p. 12) the author, rightly, points out, what is not known to the average public, that the Negroids have a lack of the enzyme lactase in many cases, and cannot rely on a milk diet. This means that there is much misplaced charity to Africa in sending them powdered milk.

Very properly he draws attention, as reported in *Science*, 15th February 1972, that intelligence in twins is highly correlated with genetic factors, and barely at all with the socio-economic status of the parents.

Surprisingly, or not, according to our viewpoint, he draws attention (p. 13) to the fact that 10 per 1000 coloured immigrants in England have developed mental disorders against 6 per 1000 of the native Britons. On the other hand, Parkinson's Disease is more common among Europeans than Negroes.

Races are different, and cannot be treated alike.

There is much more of a similar nature in this brochure, and it is worth perusal as it brings it all together in a simple and easily assimilable form.

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